TECHNICAL SPECIFICATIONS

WASHINGTON STATE FERRIES

M.V. SEALTH DOCKSIDE PRESERVATION

CONTRACT NO. 00-7083

TECHNICAL SPECIFICATIONS

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WASHINGTON STATE FERRIES

M.V. SEALTH DOCKSIDE PRESERVATION

CONTRACT NO. 00-7083

TECHNICAL SPECIFICATIONS

For the following Technical Specifications, the Contractor is to provide all labor, material and equipment to accomplish each and every Bid Item unless otherwise specified.

For the following Technical Specifications, the Contractor is to provide all labor, material and equipment to clean and gas free all spaces including any tanks, piping and reservoirs associated with the work, as necessary, and obtain a Marine Chemist certificate for "SAFE FOR WORKERS", and "SAFE FOR HOT WORK". Maintain the certificate during the course of the Work. Provide fire watches as required.

The Specification Item sub-titles in brackets are for WSF internal use only, for Life Cycle Cost modeling. Bidders should ignore such bracketed sub-titles.

1. BERTH VESSEL

{INTERIOR PRESERVATION}

A. M.V. SEALTH Vessel Particulars:
Length: 328'-0", Beam: 78'-8", Draft: 15'-6", Gross Tons: 2,477.

B. Berth Vessel for the work specified herein and any necessary repairs.

2. TEMPORARY SERVICE
{INTERIOR PRESERVATION }

A. Install one (1) telephone on board in a location designated by the Vessel Staff Chief Engineer. The telephone is to have one (1) outside line with toll-free access to Seattle and vicinity and, if different, one (1) line for local numbers. The telephone shall have touch-tone service if available from the Contractor's telephone system.

B. Provide and maintain electricity, water, sewage removal, safe lighted gangway and trash removal services while Vessel is in the Contractor's facility.

C. Provide safety and security for the entire Vessel throughout the construction, repair or preservation period until such time as the WSF Representative has accepted re-delivery of the Vessel. Every reasonable precaution shall be taken to protect the Vessel from the hazards of fire, flooding, pilferage, malicious damage, and other events including cataclysmic phenomena of nature.

D. Provide and maintain comprehensive and effective fire prevention and fire detection, and fire fighting programs and systems sufficient to ensure the safety and integrity of the Vessel. Provide personnel trained in shipboard fire fighting techniques and also trained to cooperate with and assist local fire fighting organizations. Provide sufficient shore fire hoses to ensure an adequate supply of fire fighting water, at sufficient pressure, and maintain an adequate number of tested fire-hoses aboard the Vessel to effectively fight fires at any location in the Vessel. Provide fire temporary alarm system until dock trials.

E. Provide and maintain portable fire extinguishers in sufficient quantity, and of the appropriate type, to combat local fires of any class. Provide sufficient fire watches, including roving watches as may be required, to ensure that fires that may be inadvertently started by welding sparks or heat, electrical malfunction, or spontaneous combustion are detected, reported and promptly extinguished.

F. Provide temporary cathodic protection and submit weekly cathodic protection readings to WSF Inspector.

G. Provide portable toilet facilities with hand washing facilities in the vicinity of the Vessel gang way for the sole use of the Vessel crew, with weekly scheduled cleaning and maintenance.

H. Provide a certified non-contaminated bottle water dispenser with hot and cold taps in a location designate by the Vessel Staff Chief Engineer. Provide sealed bottles of water to the location of the dispenser, estimate five (5) gallons per day.

PAINTING OF VESSEL AND HULL PRESERVATION

Special Note

(ATTACHMENT NO. 1)

Area Preparation, Surface Preparation, Grit Blasting, Paint Coatings, and Inspection for Vessel's hull, curtain plates, casing and super structure shall be in accordance with Washington State Ferries' Marine Coating Specification 1/03 unless otherwise specified in the following Specifications.

ELECTRICAL REPAIRS AND INSTALLATIONS

(ATTACHMENT NO. 2)

ELECTRICAL INSTALLATION SPECIFICATION
REV 09/02

Details of all electrical installations shall be in accordance with Attachment No. 2, WSF ELECTRICAL INSTALLATION SPECIFICATION unless otherwise specified in the following Items.

3. REMOVAL OF DECK COVERING, FURNITURE AND FITTINGS
{INTERIOR PRESERVATION-PASSENGER SPACES}

ASBESTOS WARNING
Existing deck tile, underlayment, and joiner panels contain asbestos of varying amounts. Tile, underlayment, and joiner panel removal shall be accomplished by licensed personnel in accordance with current Federal, Local, and State environmental regulations. Removed materials shall be disposed of in accordance with current Federal, Local and State, regulations.

A. Remove and dispose of the existing settee cushions, settee bases, tables, and loose chair seating. Remove and dispose of all of the furniture in the conversation areas in each corner of the passenger cabin, including all of the steel foundations. Remove and dispose of the existing cafeteria seating, rails, and all stub walls including all foundations. Remove and dispose of the existing divider running between and outboard of the stanchions at frame 24 No. 2 End.

B. Remove newspaper racks, centennial boards, brochure racks, crew license display boards, waste receptacles, vending machines and video games and save for reinstallation. Remove the furnishings in the purser's office including the public address system and save for reinstallation. Remove cafeteria condiment stands, cafeteria serving stand (located next to serving line partition), and cafeteria serving line partition and save for reinstallation. Remove microwave cabinet from Purser's Office and save for reinstallation. Provide secure, heated, dry storage for these Items.

C. Remove and dispose of all the existing tile and underlayment on the cafeteria, storage lockers, cleaning gear lockers, passenger cabin and purser's office decks and stairways between the Upper Vehicle Deck and the Passenger Deck. Care shall be taken to prevent damage to the doorsills.

D. Remove and dispose of the seating hold-down fasteners, the conversation area foundations, cafeteria furniture foundations, and partition foundations.

E. Grind the deck smooth in way of all foundation and fastener removals.

4. REMOVAL OF PANELING IN PASSENGER CABIN AND PURSER'S OFFICE

{INTERIOR PRESERVATION-PASSENGER SPACES}

ASBESTOS WARNING

Existing deck tile, underlayment, and joiner panels contain asbestos of varying amounts. Tile, underlayment, and joiner panel removal shall be accomplished by licensed personnel in accordance with current Federal, Local, and State environmental regulations. Removed materials shall be disposed of in accordance with current Federal, Local and State, regulations.

A. Remove and inventory artwork and adjoining labels. Provide one (1) copy of the Inventory to the WSF Inspector. Crate the artwork in cushioned crates with each piece of artwork separated in the crate with frames and glass protected from damage. Attach copy of Inventory to each crate. Transport crates to WSF 6th. Avenue Warehouse and off load within one (1) week of removal.

B. Remove and dispose of paneling in the passenger cabin, cafeteria, and purser's office. The paneling removal is to include both above and below the passenger cabin windows, paneling on bulkheads, and paneling in the stairwells. Remove panels on the bulkheads in the purser's office. The intent is to remove all paneling from the designated areas.

C. Remove and dispose of all bulkhead thermal insulation and insulation attachments.

D. Map the location and provide copy to the WSF Inspector within one (1) week of completion, remove and reinstall all interferences required to complete this Item, including but not limited to receptacles, electrical panels, switches, vending machine foundations, coat racks, label plates, signs, notices, alarm bells, fire station boxes, pictures, bulletin boards, license holders, public address equipment, art work, and plaques. All electrical cable shall be concealed behind panels. Electrical equipment shall be flush mounted. If existing electrical cable intended for reuse is too short, replace it with new low smoke cable. Cable splices shall not be used. All new electrical cable shall be Low Smoke per MIL-C-24643A.

E. Prepare new and disturbed areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) color to be in accordance with **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor**.**

5. RESTROOM REMOVALS

{INTERIOR PRESERVATION-PASSENGER SPACES}

ASBESTOS WARNING

Existing deck tile, underlayment, and joiner panels contain asbestos of varying amounts. Tile, underlayment, and joiner panel removal shall be accomplished by licensed personnel in accordance with current Federal, Local, and State environmental regulations. Removed materials shall be disposed of in accordance with current Federal, Local and State, regulations.

A. Remove all surface mounted fittings including bulkhead mounted lights, counters, sinks, commodes, urinals, hand dryers, mirrors, plumbing, stall dividers, partitions, steam heaters, booster heaters and all other fittings and interferences necessary for renovation of the passenger deck Men's, and Women's restroom spaces. Restore all interferences upon completion of renovation. Remove deep sinks in both cleaning gear lockers.

B. Thoroughly clean and disinfect sinks, commodes, urinals, and flushing valves removed from restrooms. Strap cleaned valves, commodes, and urinals to pallets, and transport to WSF Eagle Harbor facility, marked for the Pipe Shop.

C. Remove and dispose of all tiles from the decks and cove pieces from the bulkheads of the Men's and Women's, restrooms. Remove all underlayment.

D. Remove and dispose of all existing bulkhead paneling.

6. PASSENGER CABIN, CAFETERIA, RESTROOMS, STORAGE LOCKERS AND PURSER'S OFFICE, DECK STEEL RENEWALS

{INTERIOR PRESERVATION-PASSENGER SPACES}

A. Protect windows and other fittings from damage during the work.

B. Prepare stairways, passenger cabin, storage lockers, cleaning gear lockers, cafeteria, restrooms and the purser's office deck to SSPC-SP6, Commercial Blast Cleaning with a track blaster. Remove all traces of blast beads from all areas of the Vessel. Areas that are inaccessible to a track blaster shall be prepared to SSPC-SP3, Power Tool Cleaning. Prepare adjacent bulkheads and stiffeners from the deck up six inches (6") SSPC-SP3, Power Tool Cleaning. Apply one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT) to all areas prepared above. Install new furniture hold down fasteners, brochure rack mounting bracket feet, and half height wall framing attachments prior to painting and putting down underlayment.

C. Immediately upon completion of track blasting and mechanical preparation, provide a condition found report of deck and bulkhead steel conditions to the WSF Inspector.

D. Remove and reinstall all interferences necessary to complete this Item.

E. Repair or replace damaged deck steel.

For bidding purposes assume 500 square feet of deck steel will require replacing, and 100 localized pits will require clad welding and grinding flush. Contract will be adjusted upward or downward to reflect actual steel installed and pits filled.

F. Crop out and insert the entire deck in way of the pipe chase between the men and women's restrooms. The insert shall extend six inches (6") past the pipe chase bulkheads into the restrooms. Preserve new steel and clad welded areas in accordance with this Item.

G. Provide an accurate sketch to the WSF Inspector showing all renewed areas.

H. Repair all paint damaged by deck and other removals or installations in overhead of car lanes to SSPC-SP3, Power Tool Cleaning. Apply one (1) coat of Sherwin-Williams, Seaguard 5000HS or 6000LT, Off White, to obtain a minimum of, 4-8 mils (DFT) to all prepared surfaces. Hand stripe all edges. Apply a topcoat of Sherwin-Williams, Sherthane 2K, 2-4 mils DFT, to cover, on all surfaces. Color same as existing one.

7. CAFETERIA, PASSENGER CABIN AND PURSER'S OFFICE, DECK COVERING INSTALLATION

{INTERIOR PRESERVATION-PASSENGER SPACES}

NOTE:
Underlayment shall not be installed until all studs, under deck stiffening, and any other under deck hot work is completed and properly preserved.

A. Install new underlayment to the passenger deck, storage lockers, cleaning gear lockers, stairways, purser's office, and cafeteria decks. The new underlayment shall provide A-30 structural fire protection. The underlayment is to be asbestos free and USCG approved. The underlayment system shall be Poly-Spec 7K or equal as approved by the WSF Inspector. Hollows, low spots and other imperfections in the first coat of underlayment shall be smoothed by a second coat. Where a difference in height exists in way of doors to adjacent spaces the underlayment shall transition eighteen inches (18") and be gradually ramped down to the low area. When the underlayment is sufficiently dry, sand out the trowel ridges to provide a smooth surface for tile installation. No trowel ridges shall show through the tile within one (1) year of installation.

B. Apply a full "skim coat" of PolySpec Lite Latex, or Ardex Feather Finish or an approved equal to the entire deck area being tiled. The skim coat shall provide a level and smooth surface for tile application. The Contractor shall warrant that the skim coat will not de-laminate from the underlayment, crack, or bubble during the warranty period. All or equal substitutions shall be approved by the WSF Inspector. The finished deck surface shall be flush with all doorsills and faired to account for deck camber.

C. Install new deck coverings in accordance with **WSF DWG 8306-658-006-01,** M/V SEALTH Deck Covering Plan & Legend. Installations methods and adhesives shall be as recommended or specified by the Manufacturer, except that all adhesives shall be waterproof. Ceramic tile shall butt up to the walls with cove piece and turn up the wall four inches (4") with bull nose tile.

D. Install a four-inch (4") rubber cove base through out the entire passenger cabin, storage lockers, cafeteria, and Purser's Office, including the booth seating sub-bases, all interior booths, stanchions, stairwells, and the new half height bulkheads in accordance with **WSF DWG 8306-658-006-01**, M/V SEALTH Deck Covering Plan & Legend.

E. Install tactile strips in passenger cabin, cafeteria, and all landings between passenger cabin and lower vehicle decks in accordance with **WSF DWG 8306-658-006-01**, M/V SEALTH Deck Covering Plan & Legend.

F. Replace the tile floor covering on stair treads and risers in all stairwells down to the lower vehicle deck level. Install Stainless steel bull nose at top of stairs. Tile shall match that installed on the passenger deck. Install new treads in accordance with **WSF DWG 8306-658-006-01**, M/V SEALTH Deck Covering Plan & Legend.

G. Modify all doors as required to clear new decks, where the doors swing into areas having new decks installed. Wrap bottom of the modified doors with 18-gage stainless steel extending ten inches (10") up each side from the bottom of the door.

H. The Contractor shall warranty the tile installation for one (1) year not to crack, de-laminate from the underlayment, or develop noticeable bumps, bulges, wave depressions or surface irregularities.

I. Upon completion of tile installation, the Contractor shall clean and wax all new tiles in accordance with the Manufacturer's recommendations.

J. Provide spare deck coverings to WSF. Provide one hundred (100) pieces of each Item of vinyl tile, fifty (50) pieces of each type of 12 x 12 ceramic tile, fifty (50) pieces of each type of 1 x 1 ceramic tile, fifty (50) linear feet of tactile strip, fifty (50) linear feet of wall base, twenty-five (25) stair treads, and twenty-five (25) stair risers. Strap materials to pallets and clearly identify materials as belonging to Sealth interior. Inventory, and attach an inventory to each indicating Manufacturer, Manufacturer's Catalogue Number, and Manufacturer's color description. Provide a copy of the inventory to the WSF Inspector. Deliver materials to WSF Eagle Harbor facility, marked for Carpenter Shop.

8. WALKOFF MAT INSTALLATION

{INTERIOR PRESERVATION-PASSENGER SPACES}

A. Install a six by eight (6' by 8') walkoff mat at each exit door from the main cabin to the pickleforks, four (4) total. Mats shall be Bonar Floors Inc, Coral Duo Graphite 9110 as shown in **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor.

B. Install underlayment and structural fire protection so that the walkoff mat will be flush with the floor tiles. Coat the underlayment in the area of the walk of the mat and extending out one foot (1') with a waterproof epoxy sealer prior to installing the walkoff mats. Coral Duo shall be laid with the ribs running at right angles to the walking direction.

C. Install a stainless steel transition strip with removable flat top and countersunk fasteners over the transition between deck tile and mat.

9. INSTALLATION OF PANELING AND LAMINATE

{INTERIOR PRESERVATION-PASSENGER SPACES}

NOTE:
Underlayment shall not be installed until all studs, stub wall frames, under deck stiffening, and any other under deck hot work is completed and properly preserved.

A. Install thermal insulation below the passenger deck windows on all weather bulkheads. The insulation shall consist of two inch (2") raw glass fastened with pins on twelve inch (12") centers on bulkhead plating and one inch (1") raw glass wrapped around beams and stiffeners.

B. Install new paneling. New panels shall have finishes specified in **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Decor**.** All new material shall meet the requirements of the USCG Regulations. Designated decorative surfaces shall be laminated to the panels.

C. New panels shall be securely held in place to prevent rattling. The panels shall be removable without destroying them. Paneling shall utilize a deck shoe and a"U" top channel. Deck shoes shall be mounted above A-30 underlayment. Joints in paneling behind booths shall be located behind the booth backs. A furring piece shall be installed at approximately forty-eight inches (48") above the deck to provide stiffening. Spline joints shall not be caulked. The existing steel bulkheads are not flat and will require shimming the shoes and channels. Flash the paneling up to existing doors and fittings to provide a finished appearance. Fit up around handrails. Any metal pieces shall be prepared and primer coated. Visible metal pieces shall be finish coated as shown in **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Decor**.**

D. Shop drawings for the panel system shall be provided to WSF Inspector for approval. The drawings shall include panel attachments and removable joints details. **The Contractor shall not start installation of paneling until WSF has approved the shop drawings**.

E. Remove and replace all interferences required to complete the new panel installation, including but not limited to receptacles, electrical panels, switches, vending machine foundations, ceiling panels, "T" grid, coat racks, label plates, fire station boxes, alarm bells, pictures, bulletin boards, license holders, and plaques.

F. Seal at the bottom shoes with a suitable flexible sealant approved by the WSF Inspector, to prevent water damage to the panels.

G. Provide hinged access covers with latches to valves, fittings, connection boxes, switches, electrical panels, or any other commonly accessed object located behind the new paneling. Provide engraved phenolic labels on all access openings indicating what lies behind.

H. Install window mullion covers in accordance with **WSF DWG 8306-658-025-01**, M/V SEALTH Interior Decor. The mullion covers shall go on the windows by the booths, and shall be thermally insulated. The windows at frames thirty-nine (39), the ends of the passenger cabin, shall not receive mullion covers. Install two (2) coat hooks on each mullion cover. Install foundations on the 'T" attached to the mullions. The mullion covers are to fit closely to the paneling and are to have no fasteners showing inboard.

I. Install windowsills in accordance with **WSF DWG 8306-658-025-01**, M/V SEALTH Interior Décor. Provide and install Artwork as shown on **WSF DWG, 8306-658-25-02**, M/V SEALTH Interior Upgrade.

J. Fabricate new stub walls at conversation areas as described **WSF DWG 8306-658-025-01**, M/V SEALTH Interior Décor.

K. The walls shall be fabricated from 4" by 2" by 3\16" steel tubing with posts to the deck every forty-eight inches (48") and rails running along the top, intermediate, and bottom. The walls shall be constructed to account for deck camber so that wall top is horizontal. Panel the new stub walls, furnish and install caps, rail tops art glass and frames as shown in **WSF DWG 8306-658-025-01**, M/V SEALTH Interior Décor**.**

L. Stain the rail caps as directed in **WSF DWG 8306-658-025-01**, and apply three (3) coats of Sikkens Cetol varnish. Provide and install artwork as shown on **WSF DWG 8306-658-025-02**, M/V SEALTH Interior Upgrade**.**

M. Install paneling and finished ceilings in the stairwells down to the fire screen doors. Flash the paneling up to existing doors, and fittings to provide a finished appearance. Provide new foundations for hand railings so they finish properly in the new paneling. Remove existing handrails to accomplish this work, and reinstall on new foundations. Fit around the handrails in the stair towers or modify to suit. Any visible metal flashings or fittings are to be prepared, primer coated, and painted as shown in **WSF DWG 8306-658-025-01**, M/V SEALTH Interior Décor**.**

N. Prepare new and disturbed areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT). Hand stripe edges. Apply 2 mils (DFT) finish coat in accordance with **WSF DWG 8306-658-025-01**, M/V SEALTH Interior Décor**.**

O. Provide spare panels and hardware to WSF. Provide ten (10) pieces of each type of panel, twenty (20) pieces of full height panel connecting strips, twenty (20) pieces of full height panel end strips, twenty (20) pieces of full height panel interior corner molding, twenty (20) of full height panel exterior corner molding, forty (40) linear feet of panel deck shoe and forty (40) linear feet of panel top channel. Strap materials to pallets and clearly identify materials as belonging to SEALTH interior. Inventory and attach an inventory to each indicating Manufacturer, Manufacturer's catalogue number, and Manufacturer's color description. Provide a copy of the inventory to the WSF Inspector. Deliver materials to WSF Eagle Harbor facility, marked for Carpenter Shop.

10. BOOTH TABLE AND TRANSIT SEATING INSTALLATION

{INTERIOR PRESERVATION-PASSENGER SPACES}

NOTE:
Underlayment shall not be installed until all studs, stub wall frames, under deck stiffening, and any other under deck hot work is completed and properly preserved.

A. Install new Contractor provided booth seating, tables, and transit seating in the passenger cabin in accordance with **WSF DWG 8306-658-019-01,** M/V SEALTH Furniture Arrangement.

B. Weld studs to the passenger cabin deck prior to installation of underlayment. Booths and tables will be attached to these studs after the installation of deck coverings. Prepare the bases of the studs to an SSPC-SP3, Power Tool Cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT to prepared steel surfaces. Fabricate and install backing plates for table and drink table L brackets.

C. Install sub-bases for booth seating to permit booths to be leveled horizontally.

D. Install drink tables in accordance with **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor.

E. Install Contractor provided booths and tables. Booths shall be installed such that the bases and sub bases are as tight to adjacent bulkhead paneling as possible. Enclose any space between the sub bases and/or bases and the bulkhead paneling with flashing.

F. Prepare the surfaces of all stanchions on the passenger deck and cafeteria area to SSPC-SP3, Power Tool Cleaning. Feather and smooth chipped and rough paint.

G. Coat all prepared surfaces with INTERNATIONAL Intertuf 262 epoxy, 5 mils DFT. Hand stripe edges. Apply 2 mils (DFT) finish coat in accordance with **WSF DWG 8306-658-025-01**, M/V SEALTH Interior Décor.

H. Install decorative treatment and coat hooks on stanchions as shown in **WSF DWG 8306-658-025-01**, M/V SEALTH Interior Décor.

I. Caulk around the base of the booths and tables to keep water out of the bases.

J. Preserve and reinstall centennial boards, and brochure racks in accordance with **WSF DWG 8306-658-025-01**, M/V SEALTH Interior Décor.

K. Preserve and reinstall crew license display boards in accordance with **WSF DWG 8306-658-024-01**, M/V SEALTH Signage Arrangement and Schedule.

L. Prepare all areas of new installation and damaged paint not addressed elsewhere in this Item, to SSPC-SP3, Power Tool Cleaning. Coat all prepared surfaces INTERNATIONAL Intertuf 262 epoxy, 5 mils DFT. Hand stripe edges. Apply 2 mils (DFT) finish coat in accordance with **WSF DWG 8306-658-025-01**, M/V SEALTH Interior Décor.

M. Install Contractor provided transit seating in accordance with **WSF DWG 8306-658-019-01**, M/V SEALTH Furniture Arrangement.

11. CAFETERIA MODIFICATIONS

{INTERIOR PRESERVATION-PASSENGER SPACES}

NOTE:
Underlayment shall not be installed until all studs, stub wall frames, under deck stiffening, and any other under deck hot work is completed and properly preserved.

A. Install new Contractor provided cafeteria seating and tables in accordance with **WSF DWG 8306-658-019-01,** M/V SEALTH Furniture Arrangement.

B. Remove and reinstall all interferences necessary to complete this Item.

C. Weld studs to the passenger cabin deck prior to installation of underlayment. Seats and tables will be attached to these studs after the installation of deck coverings. Install additional under deck stiffening in way of each cafeteria table/seat base not landing on existing under deck stiffeners in accordance with WSF DWG **8306-658-003-02**, MV SEALTH Miscellaneous Structure in Way of Café Seating. Prepare the bases of the studs to an SSPC-SP3, Power Tool Cleaning, and coat with INTERNATIONAL Intertuf 262 Epoxy, to obtain a minimum of 5 mils DFT.

D. Install a new stub wall at frame twenty-six (26) and wrapping around as described in **WSF** DWG **8306-658-025-01,** M/V SEALTH Interior Décor. The wall shall be fabricated from four (4") by two (2") by 3\16" steel tubing with posts to the deck every forty-eight inches (48") and rails running along the top, intermediate, and bottom. The wall shall be constructed to account for deck camber so that wall top is horizontal. Panel the new stub walls, furnish and install caps, rail tops art glass and frames as shown in **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor.

E. Stain the rail caps as directed in **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor and then apply three coats of Sikkens Cetol varnish.

F. Refinish and reinstall the serving line partition.

G. Install new Contractor supplied seating units in the cafeteria finished in accordance with **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor.

H. Reinstall the condiment stand and cafeteria serving stand.

I. Modify electrical panels and components so they are flush with new paneling.

J. Area around the electrical panels shall be finished using removable aluminum panels covered with laminate matching the new bulkhead panels. Install all necessary furring to properly support the new panels.

K. All new steel is to be prepared to SSPC-SP 6, Commercial Blast Cleaning. Disturbed surfaces are to be prepared to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

12. REFURBISH PURSER'S OFFICE

{INTERIOR PRESERVATION-PASSENGER SPACES}

NOTE:
Underlayment shall not be installed until all studs, under deck stiffening, and any other under deck hot work is completed and properly preserved.

A. Install a new door at the pipe chase entrance from the Purser's office in accordance with **WSF DWG 8306-658-003-01,** M/V SEALTH Passenger Deck Structural Interior Bulkhead Modifications**.** The new door shall be similar in construction as other passenger deck interior joiner doors, finished as surrounding bulkhead areas and fitted with a fume tight seal. The new door shall be sized in accordance with **WSF DWG 8306-658-004-01,** M/V SEALTH Door Modifications.

B. Remove and reinstall all interferences necessary to complete this Item.

C. Relocate electrical kick pipes, junction boxes and general alarm panel to accommodate new furnishings that installed in accordance with **WSF DWG 8306-658-019-01,** M/V SEALTH Furniture Arrangement.

D. Apply INTERNATIONAL Intertuf 262 epoxy, 5 mils DFT to all surfaces prepared by this Specification section. Paint the interior doors and any unfinished bulkhead areas in the Purser's Office using color scheme of **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor.

E. Reinstall previously removed furnishings described in **WSF DWG 8306-658-019-01,** M/V SEALTH Furniture Arrangement.

F. Reinstall microwave cabinet.

G. Reinstall and prove proper operation of Public Address system.

13. REPLACE DRINKING FOUNTAIN {ADA}

A. Remove and dispose of the existing drinking fountain, port side, frame six (6) and replace it with a new drinking fountain as shown in **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor.

B. Remove and reinstall all interferences necessary to complete this Item.

C. Remove the drinking fountain on the starboard side, frame twelve (12). This fixture shall not be replaced. Remove piping back to the supply main, electrical cable back to the supply end and remove the drain and vent back to next common service. Insert the deck and bulkhead in areas of removed piping.

D. Cleaning and disinfecting shall be accomplished in conjunction with and in accordance with Item 20, Piping Modifications.

14. PAINTING IN PASSENGER CABIN, PURSER'S OFFICE AND CAFETERIA

{INTERIOR PRESERVATION-PASSENGER SPACES}

A. Paint all surfaces not otherwise receiving a new finish, including but not limited to window surrounds, fire stations, doors, stanchions, bulkheads, decks, lifejacket lockers, storage lockers, cleaning lockers, electrical panels and switches, and appurtenances located in the passenger cabin, stairways, galley, restrooms, cafeteria, and purser's office.

B. Prepare the fire stations, painted doors, stair tower doors, stair tower decks, and promenade doors and frames with a suitable surface prep cleaner such as DEVOE DevPrep., or INTERNATIONAL GMA. 571. Prepare areas of failed and chipped paint to a SSPC-SP3, Power tool cleaning. Feather edges and smooth rough paint. Prime coat bare areas with INTERNATIONAL Intertuf 262 epoxy, 5 mils DFT.

C. Topcoat the doors, the interior side of stairway doors and Fire screen doors as specified in **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor. The exterior side of stairway doors to be painted with INTERNATIONAL Intercare to a minimum of 2 mils (DFT, haze gray). Prepare and electrostatic spray paint the brochure stand as specified in **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor using color PT-3.

D. All painting around stairwells, including the doors, stanchions, stair step risers, handrails, and casing shall be painted as specified in **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor.

E. Install signage in accordance with **WSF DWG 8306-658-024-01,** M/V SEALTH Signage Arrangement and Schedule. Restore all of the signs, tags, and labels located in the renovated areas of the passenger cabin not addressed by **WSF DWG 8306-658-024-01,** M/V SEALTH Signage Arrangement and Schedule. All overhead signs shall be mechanically fastened to the overhead. Signs mounted on vertical surfaces shall be mechanically fastened or glued in place. Double sided tape shall not be used to attach any sign.

15. REFURBISH ELEVATOR CAB

{INTERIOR PRESERVATION-PASSENGER SPACES}

A. Provide the services of a Washington State Department of Labor and Industries (L&I) licensed and approved Elevator Repair Company to refurbish the interior of the elevator cab.

B. Remove exterior coverings on elevator doors at auto deck and passenger cabin. Replace covering on exterior of passenger cabin door with laminate identical to that covering passenger cabin bulkheads identified in **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor. Paint exterior elevator doors at auto deck with one (1) coat of Sherwin-Williams, Seaguard 5000HS or 6000LT, Off White, to obtain a minimum of, 4-8 mils (DFT). Hand stripe all edges. Apply a topcoat of Sherwin-Williams, Sherthane 2K, 2-4 mils DFT, to cover, on all surfaces. Color same as existing one.

C. Remove laminate and panels from elevator car and replace with laminate and panels with finish shown in **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor as BH-1.

D. Replace elevator car deck covering with new material as shown in **WSF DWG 8306-658-006-01**, M/V SEALTH Deck Covering Plan & Legend as FL-11. The floor of the elevator is wood so care must be exercised during removal of the existing floor.

E. Replace cab railing with new railing similar to existing.

F. Replace cab false ceiling with a new reflective egg-crate type ceiling, reusing existing cab lighting.

G. Ensure emergency key access hole in the elevator doors are not covered.

16. REPLACE DROPPED CEILING AND LIGHTING

{INTERIOR PRESERVATION-PASSENGER SPACES}

A. Map the ceiling grid, lighting panels, steam heater cover panels, ventilation terminals, and any overhead access openings to valves, connection boxes, and speakers. Provide copy to the WSF Inspector prior to ceiling removal.

B. Remove the overhead acoustic ceiling panels and "T" grid in the food service area, passenger cabin, stairways, rest rooms, the purser's office, galley, and the cafeteria. Remove all of the acoustic panels, loose fitting ventilation panels and all appurtenances attached to the dropped ceiling to accomplish this work. Temporarily tie up existing lighting, alarms, switches, speakers and any other fixtures or devices resting or connected to the ceiling. Existing "T" grid wire hangers may be reused if desired.

C. Rip out all existing suspended ceiling fluorescent light fixture cables back to junction box or lighting panels. Replace removed cable with LSTGSU-4 low smoke marine electric cable. Ground all subject fixtures back to associated power panels as shown in **WSF DWG 8306-658-092-01,** M/V SEALTH Passenger Deck Mid Section Lighting System.

NOTE:
The Contractor is cautioned that there are poured transits located throughout the existing wireways on this Vessel. These transits are not to be disturbed. Any existing cables that are required to be removed from these poured transits shall be cut off at the nearest hanger on each side of the transit, leaving a short pigtail. The pigtail shall be sealed with a heat shrink boot, and the entire length of the cut cable running through the transit cable shall be painted red. If new transits are required to complete the installation, they shall be Nelson MCT's.

D. Replace all existing suspended ceiling fluorescent light fixtures. Replace existing 4x40W and 2x40W with new fixtures identical to the fixtures described as shown on **WSF DWG 8306-658-092-01,** M/V SEALTH Passenger Deck Mid Section Lighting System. Replaced fixtures shall be complete in every respect including having new ballast, lamps and diffusers installed. Wherever new penetrations are required they shall maintain the watertight and fire ratings of the bulkhead or deck being penetrated. Existing non-poured bulkhead and deck penetrations may be reused.

NOTE:
Ensure new "T" grid is compatible with new suspended ceiling fluorescent light fixtures.

E. Modify "T" grid as necessary to accept new lighting fixtures.

F. Install two (2) additional new 4x40W fixtures in the cafeteria/galley overhead in accordance with **WSF DWG 8306-658-092-01,** M/V SEALTH Passenger Deck Mid Section Lighting System. New fixtures shall be complete in every respect including having new ballast, lamps and diffusers installed.

G. Relocate lighting panel L3 in men's restroom cleaning gear locker in accordance with **WSF DWG 8306-658-092-01,** M/V SEALTH Passenger Deck Mid Section Lighting System and **WSF DWG 8306-658-090-02**, M/V SEALTH Passenger Deck Mid Section Power System**.**

H. Install new "T" grid in the food service area, galley, passenger cabin, rest rooms, stairways, the purser's office and the cafeteria. "T" grid installation shall be level and horizontal. Reinstall previously removed appurtenances. Coat all bare stainless steel ventilation panels with AMERON ALUMIPREP 33 conditioner prior to finish coating.

I. Powder coat all heater covers, speaker covers, ventilation panels, and all other appurtenances to match the new ceiling prior to reinstallation.

J. Install new Contractor furnished ceiling panels throughout. Ceiling panels shall be Armstrong UL rated acoustical material type 608 Fine Fissured HumiGuard Max.

K. Install aluminum access panels, with hinges and latches to powder coated to match ceiling, to allow access to all valves, fire dampers, and controls.

L. Install labels to identify the location of all valves, dampers, electrical boxes, ect. above the ceiling.

M. Demonstrate overhead lighting operation to the satisfaction of the WSF Inspector and the Vessel Staff Chief Engineer.

N. Relamp entire overhead with appropriate tube for existing ballast in 4100 K color range immediately prior to redelivery.

17. PASSENGER DECK OVERHEAD WIREWAY BANDING

{INTERIOR PRESERVATION }

A. Install banding on existing electrical cable ways in the overhead of the Passenger Cabin as directed by the WSF Inspector. This Item shall be scheduled after removal of the existing Dropped Ceiling and prior to the installation of the new Ceiling.

B. Banding of wireways disturbed by the Contractor for other specified work shall not be included in this Item.

C. New Banding shall be installed and of the type required by **WSF Attachment No. 2,** WSF Electrical Installation Specification.

NOTE:
For bidding purposes, assume that installation of 200 New Bands will require Installation. The Contract will be adjusted upward or downward to account for the actual number of Bands authorized by the WSF Inspector.

18. JOINER DOOR RENEWAL

{INTERIOR PRESERVATION-PASSENGER SPACES}

A. Provide and install new joiner doors as shown on **WSF DWG 8306-658-004-01,** M/V SEALTH Door Modification.

B. Remove and reinstall all interferences necessary to complete this Item.

C. New joiner doors and frames shall be manufactured in accordance with CFR-46-72.05. Frames are to be steel angle with Stainless Steel flatbar sill. Flanged frame shall be ¼" inch thick with a two inch (2") bolting frame. Panels are to be 11 gauge, formed and welded on all edges and suitably insulated for the bulkhead requirement. Panel is to be stiffened with box tube stiffeners at edges, around windows and in way of the closer. Internal core of the doors shall be primed.

D. Provide the services of the door Manufacturer or Best Lock to install door hardware and closures.

E. Prepare all surfaces affected by this work including all sides of the doors to an SSPC-SP3, Power Tool Cleaning. Apply one (1) coat International Intertuf 262, Buff to a minimum to obtain 6 to 8 mils (DFT) to all new surfaces and prepared surfaces. Hand-stripe all edges. Top-coat with Intercare 755, Blue White, to a minimum of 2 mils (DFT) to match surrounding.

19. ELECTRICAL SYSTEM MODIFICATIONS

{INTERIOR PRESERVATION-PASSENGER SPACES}

A. Reinstall all electrical system components disturbed by new panel and furniture installation except as specifically noted in these Specifications and **WSF DWG 8302-628-025-01,** M/V SEALTH Interior Decor, **WSF DWG 8306-658-092-01,** M/V SEALTH Passenger Deck Mid Section Lighting System and **WSF DWG 8306-658-090-02**, M/V SEALTH Passenger Deck Mid Section Power System**.**

B. Remove and reinstall all interferences necessary to complete this Item.

C. Relocated electrical fittings, fixtures, panels, and boxes, shall not incorporate junction boxes to accommodate the relocation. If existing cable lengths will not accommodate relocation, new cable same as existing or its corresponding Mil-C-24643 replacement, will be run to nearest connection point.

D. Install new receptacles, ADA power assist door openers, hand and hair dryers, and lighting in the Men's and Women's Restrooms in accordance with **DWG 8306-658-025-01,** M/V SEALTH Interior Décor**, WSF DWG 8306-658-004-01,** M/V SEALTH Door Modifications, **WSF DWG 8306-658-092-01,** M/V SEALTH Passenger Deck Mid Section Lighting System, and **WSF DWG 8306-658-090-02**, M/V SEALTH Passenger Deck Mid Section Power System**.**

E. Install new electric hot water booster heaters in men's and women's restroom cleaning gear lockers. New heaters will have same capacity and power requirements as existing heaters.

F. Install new 100-amp circuit breaker in panel PLLC2, furnish and install new distribution panel HD with breakers, and run new cable between panel PLLC2 and panel new distribution panel HD in accordance with **WSF DWG 8306-658-090-02**, M/V SEALTH Passenger Deck Mid Section Power System**.**

G. Install new decorative lighting in the Passenger Cabin in accordance with **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor and **WSF DWG 8306-658-092-01,** M/V SEALTH Passenger Deck Mid Section Lighting System.

H. Install new receptacles in the passenger cabin in accordance with **WSF DWG 8306-658-090-02,** M/V SEALTH Passenger Deck Mid Section Power System**.**

I. Replace Lighting Panels L1 and L2 in Pilot House No. 1 and No. 2 as shown on **WSF DWG 8306-658-090-02**, M/V SEALTH Passenger Deck Mid Section Power System.

J. Prepare all areas of new installation and damaged paint not addressed elsewhere in this Item, to SSPC-SP3, Power Tool Cleaning. Provide labor, material and equipment to coat all prepared surfaces with INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT). Apply 2 mils (DFT) finish coat in accordance with **WSF DWG 8306-658-025-01**, M/V SEALTH Interior Décor.

K. Demonstrate the new installation to the satisfaction of the WSF Inspector and the Vessel Staff Chief Engineer.

20. PIPING MODIFICATIONS

{INTERIOR PRESERVATION-PASSENGER SPACES}

A. Rip out plumbing drains in accordance with **WSF DWG 8306-658-011-01,** M/V SEALTH Toilet Space Refurbishment Plumbing Drains. Rip out existing pipe tunnel deck and reinsert. Air test or vacuum box test the new deck insert.

B. Remove and reinstall all interferences necessary to complete this Item.

C. Install new vents and drains in accordance with **WSF DWG 8306-658-011-01,** M/V SEALTH Toilet Space Refurbishment Plumbing Drains. New drains shall be located so that the height of toilet seats is seventeen inches (17") above the finished deck covering. Use only sweep tees and sweep ells when fabricating and installing new drains.

D. Relocate hot and cold potable water piping and vent in pipe chase behind men's restroom urinal in accordance with **WSF DWG 8306-658-011-01,** M/V SEALTH Toilet Space Refurbishment Plumbing Drains.

E. Install deck drains in accordance with **WSF DWG 8306-658-011-01,** M/V SEALTH Toilet Space Refurbishment Plumbing Drains. Insure new deck drains have a finished height above the deck that will accommodate sloped underlayment and poured flooring. Hose test for tightness and proper operation both before and after decking is installed.

F. Test each commode and urinal for smooth, unobstructed drainage to the satisfaction of the WSF Inspector and the Vessel Staff Chief Engineer.

G. Rip out existing flush water piping and valves in accordance with **WSF DWG 8306-658-074-02,** ISSAQUAH CLASS M/V SEALTH Toilet Space Refurbishment Flush Water Plumbing Arrangement.

H. Install new piping and valves in accordance with **WSF DWG 8306-658-074-02,** ISSAQUAH CLASS M/V SEALTH Toilet Space Refurbishment Flush Water Plumbing Arrangement.

I. Install filters in the flushing water lines to prevent clogging of electric flushing valves.

J. Hydrostatically test flushing water piping to 150 PSI to check for leaks.

K. Install electrical valve operating system in accordance with **WSF DWG 8306-658-090-03** M/V SEALTH Water Closet & Urinal Flushing System Electrical Installation.

L. Provide the services of a Sloan Valve Representative to adjust the flushometer valve sensors so that valves do not flush when subjected to movement of stall doors or other motion not related to their intended use.

M. Demonstrate the operation of each component of the flushing system to the satisfaction of the WSF Inspector and the Vessel Staff Chief Engineer.

N. Rip out hot and cold potable water piping in accordance with **WSF DWG 8306-658-059-01,** ISSAQUAH CLASS M/V SEALTH Toilet Space Refurbishment Fresh Water Arrangement. Unused penetrations shall be inserted and air tested to the satisfaction of the WSF Inspector.

O. Install new hot and cold potable water piping in accordance with **WSF DWG 8306-658-059-01,** ISSAQUAH CLASS M/V SEALTH Toilet Space Refurbishment Fresh Water Arrangement. Furnish and install reinforcing sleeves in all new penetrations. Take down joints shall be located to facilitate ease of maintenance.

P. Move and rewire existing hot water booster heaters to cleaning gear lockers in accordance with **WSF DWG 8306-658-059-01**, ISSAQUAH CLASS M/V SEALTH Toilet Space Refurbishment Fresh Water Arrangement.

Q. Hydrostatically test hot and cold potable water piping to 150 PSI to check for leaks.

R. Thermally insulate all hot potable water piping and fittings.

S. Thermally insulate all hot and cold potable water piping and fittings open to weather.

T. Prepare new and disturbed interior areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) color to be in accordance with **WSF DWG 8306-658-025-01**, M/V SEALTH Interior Décor.

U. Prepare new and disturbed exterior areas in way of this work to and SSPC-SP 3 power tool cleaning. Coat with one (1) coat of Sherwin-Williams, Seaguard 5000HS or 6000LT, Off White, to obtain a minimum of, 4-8 mils (DFT) to all prepared surfaces. Hand stripe all edges. Apply a topcoat of Sherwin-Williams, Sherthane 2K, 2-4 mils DFT, to cover, on all surfaces. Color same as existing one.

V. Prior to placing the potable water system in service, the entire potable water system, including the storage tanks, shall be cleaned, disinfected and flushed in strict accordance with the requirements of cognizant regulatory agencies. It is recommended that the Disinfection procedures outlined in the WHO Guide to Ship Sanitation, Annex 1, be consulted as providing an acceptable method of disinfection.

W. Certificates of Disinfection shall be provided to the WSF Inspector prior to the system being placed in service prior to redelivery.

X. The potable water system shall be flushed sufficiently that water drawn from the most remote tap or faucet is free from all color or taste of paint, preservative, or disinfectant.

NOTE:
Should it be necessary to reopen the potable water system prior to redelivery, the entire system shall be re-cleaned and disinfected. New certificates of disinfection shall be provided to the WSF Inspector. Reopening and re-disinfecting of the potable water system shall be wholly at the expense of the Contractor.

21. SHAFT ALLEY BILGE PAINTING
{STRUCTURAL PRESERVATION}

NOTE:
Special care is to be taken to protect all equipment including but not limited to the propeller shaft, grounding brushes, and slip rings. The Vessel Staff Chief Engineer will inspect the protection prior to the start of any cleaning.

A. Prepare and paint the area of the No. 1 and No. 2 End shaft alley bilges from frame forty-eight (48) to frame fifty-two (52), from the upper cat walk level to the keel including all piping, foundations and framing.

B. Thoroughly degrease and clean the areas to be prepared and painted by a water wash to SSPC-SP 12/NACE 5 Low Pressure Water Cleaning (LP WC) WJ-3 using appropriate degreaser.

C. Upon completion of degreasing water wash to SSPC-SP 12/NACE 5 Low Pressure Water Cleaning (LP WC) WJ-3 Water wash the area described above using International GMA.

D. Prepare areas of failed coating to SSPC-SP 3 Power Tool Cleaning,

E. Paint SSPC-SP 3 prepared areas with two (2) coats of INTERNATIONAL Intertuf 262 Epoxy, 4 mils (DFT) each. Second coat to be light gray. Hand stripe all edges. Apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

F. Topcoat all of the areas described above in Paragraph "A" with two (2) coats of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) each, color to Bbe light gray.

NOTE:
For bidding purposes assume 3500 sq ft of bilge area in each shaft alley will require SSPC-SP 3 preparation and coating. The Contract Price will be adjusted upwards or downwards to reflect any difference in area of failed coating.

22. RESTROOM RENOVATION

{INTERIOR PRESERVATION-PASSENGER SPACES}

A. Insert the bulkheads behind existing commodes to allow for the installation of new commodes in the men's and women's restrooms. The insert in each restroom shall be approximately three feet (3') high and continuous behind all of the commodes. Maintain the bulkhead flat and true during inserting. On the interior of the pipe chase on both longitudinal bulkheads, install ¼" x 2" x 27" flat bar header, above (23 ¼" above the deck) and below (9 ¼"above deck) each toilet drain penetration. The header shall be skip welded to the bulkhead and continuously welded at the attachment points to each vertical stiffener. Locate and install new penetrations in accordance with **WSF DWG 8306-658-025-01**, M/V SEALTH Interior Décor and **WSF DWG 8306-658-074-02**, ISSAQUAH CLASS M.V. SEALTH Toilet Space Refurbishment Flush Water Plumbing Arrangement**.**

B. Remove and reinstall all interferences necessary to complete this Item.

C. New drain penetrations shall be located so that the height of toilet seats is seventeen inches (17") above the finished deck covering.

D. Rip out the bulkheads behind existing urinals in the men's restroom in accordance with **WSF DWG 8306-658-003-01,** M/V SEALTH Passenger Deck Structural Interior Bulkhead Modifications. Install framing sufficient to support the urinals, associated plumbing and joiner BHD at frame 6-½ in accordance with **WSF DWG 8306-658-003-01**, M/V SEALTH Passenger Deck Structural Interior Bulkhead Modifications. Provide and install locking, hinged, stainless steel access panels, powder coated to match the surrounding area to all plumbing take down joints, and electrical flushing system components.

E. Remove all doors entering the men's and woman's restrooms and the men's restroom cleaning gear locker. Insert the cleaning gear bulkhead in way of removed door in accordance with **WSF DWG 8306-658-003-01,** M/V SEALTH Passenger Deck Structural Interior Bulkhead Modifications.

F. Replace existing steam space heaters in both restrooms with new heaters in the location shown on **WSF DWG 8302-628-025-01,** M/V SEALTH Interior Decor having the same size and capacity of existing heaters.

G. Install new door and hardware into the men's restroom cleaning gear locker in accordance with WSF DWG 8306-658-003-01, M/V SEALTH Passenger Deck Structural Interior Bulkhead Modifications and WSF DWG 8306-658-004-01, M/V SEALTH Door Modifications. Relocate all interferences, including lighting panel L3, incident to the door installation as directed by the WSF Inspector. Install new mop sinks in cleaning gear lockers in accordance with WSF DWG 8306-658-011-01, ISSAQUAH CLASS M.V. SEALTH Toilet Space Refurbishment Plumbing Drains Arrangement. Relocate the shelving within the compartment as directed by the WSF Inspector, and WSF DWG 8306-583-007-01 M/V SEALTH, Acoustic Enclosure, Engineering Day Room/E.R No 1, Arrangement and Details.

H. Install an archway in way of removed door to women's restroom at frame eighteen (18) in accordance with WSF **DWG 8306-658-003-01,** M/V SEALTH Passenger Deck Structural Interior Bulkhead Modifications. Install new bulkhead behind new urinals in accordance with **WSF DWG 8306-658-003-01,** M/V SEALTH Passenger Deck Structural Interior Bulkhead Modifications.

I. Install new doors, power assist door openers, and hardware into the men's and women's restrooms in accordance with **WSF DWG 8306-658-003-01,** M/V SEALTH Passenger Deck Structural Interior Bulkhead Modifications and **WSF DWG 8306-658-004-01,** M/V SEALTH Door Modifications. Doorsills shall be leveled to height of finished passenger deck.

J. Install new stub walls and privacy partitions in the men's and women's restrooms as indicated in **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor**.**

K. Install new stainless stall partitions, doors, and fittings in accordance with **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor. Fabricate and install headers in the overhead of the men's and women's restrooms to permit the attachment of the top of the privacy stalls. The bottom to the stalls shall be attached to the deck with suitable fasteners that will take into account the height of the finished floor. Stall partitions shall be assembled using three hundred sixteen (316) stainless steel screws with tamper proof heads.

L. All new steel shall be prepared to SSPC-SP 6, Commercial Blast Cleaning. Disturbed surfaces are to be prepared to an SSPC-SP3, Power Tool Cleaning. Furnish and apply INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT) to all new and disturbed surfaces steel surfaces.

M. Install new waterproof underlayment in the restrooms, cleaning gear lockers, including the new locker in the women's restroom. The decks are to be A-0 structural fire protection rated. The underlayment shall be sloped towards deck drains. Install underlayment level with doorsills and extend this level eighteen inches (18'') inside doors and gradually ramp down to finish floor.

N. Install new poured decking with cove in the restrooms, cleaning gear lockers, including the new locker in the women's restroom in accordance with **WSF DWG 8306-658-006-01,** M/V SEALTH Deck Covering Plan & Legend.

O. Panel restrooms in accordance with **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor. New panels shall be securely held in place to prevent rattling. The panels shall be removable without destroying them. Paneling shall utilize a deck shoe and a "U" top channel. Install a furring piece at approximately forty eight inches (48") above the deck to provide stiffening. Spline joints shall not be caulked. The existing steel bulkheads are not flat and will require shimming the shoes and channels. Flash the paneling up to existing doors and fittings to provide a finished appearance. Any metal pieces shall be prepared and primer coated. Visible metal pieces shall be finish coated as shown in **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor**.** Rough up panel surfaces to be covered by tile to insure proper adhesive adhesion.

P. Tile all surfaces designated in **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor. Bull nose tile shall be used where tile abuts with other surface finishes. Tile cove piece shall be used where finished floor abuts to bulkheads or where bulkhead tile abuts to counters or any other horizontal surfaces.

Q. Install new decorative and cornice lighting in the men's and women's restrooms in accordance with **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor and **WSF DWG 8306-658-092-01,** M/V SEALTH Passenger Deck Mid Section Lighting System.

R. Install new countertops for all lavatory counters and for the Women's vanity area. Countertops shall have a **raised** drip edge. Provide and install framing as needed to support the countertops. Counter tops shall be as shown in **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor. Construct and install metal casework and foundations beneath lavatory countertops as shown in **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor. Casework shall have locking doors, hidden hinges, flush pulls, and half height shelves. The casework shall be made from aluminum, prepared and painted inside and out and covered with the designated finish in exposed areas in accordance with **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor. Install GFCI protected outlets in accordance with **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor and **WSF DWG 8306-658-090-02**, M/V SEALTH Passenger Deck Mid Section Power System.

S. Install new lavatory sinks and fixtures in the Men's and Women's restrooms identified in **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor. Fixtures to be provided include mirrors, shelves, soap dispensers, toilet paper dispensers, seat protector dispensers, waste receptacles, hand dryers, hair dryers, lights, tampon dispenser, and signs. Install fixtures using new, vandal proof, three hundred sixteen (316) stainless steel fasteners. Fixtures shall be installed neat so that the installation of shims or furring is not required.

T. Install new commodes, urinals, flushometers, and fixtures in accordance with **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor, **WSF DWG 8306-658-011-01,** ISSAQUAH CLASS M/V SEALTH Toilet Space Refurbishment Plumbing Drains Arrangement, and **WSF DWG 8306-658-074-02**, ISSAQUAH CLASS M.V. SEALTH Toilet Space Refurbishment Flush Water Plumbing Arrangement. Provide and install handrails in the ADA stalls to comply with ADA regulations. Care shall be taken to provide a flat bulkhead for the commode installation. Care shall be taken to provide to achieve the specified seat height of seventeen inches (17") over the finished deck. Flushometers shall be concealed in the pipe chase. Install the sensor in the bulkhead.

U. Fabricate and install stainless steel sheet metal covers over the heater piping and other any other exposed insulated pipes in the restrooms.

V. Furnish and apply new paint as called out in **WSF DWG 8306-658-025-01,** M/V SEALTH Interior Décor. Clean and paint the interiors of all lockers including cleaning gear lockers in the spaces with white enamel. Prepare and paint the interior of the pipe chase. Prepare the bulkheads and decks to an SSPC-SP3, Power Tool Cleaning. Coat prepared areas of the bulkheads and deck with INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT). Apply a full coat of white enamel to the bulkheads and a full coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT) to the deck in the pipe chase.

23. PASSENGER STAIRWAYS MODIFICATIONS {MAINTENANCE}

A. Remove existing and install new stairways in accordance with this Specification and the following Drawings; WSF **DWG 8306-640-003-01,** M/V SEALTH Machinery Casing Stairway Modifications and **WSF DWG 8306-658-092-01,** M/V SEALTH Passenger Deck Mid Section Lighting System.

B. Remove the four (4) existing passenger stairs between the Vehicle and Passenger Decks, and replace with new stairs. Both the upper and lower flights of these stairs shall be replaced. Increase the number of steps in each stairway to fifteen (15) for the lower flight and to sixteen (16) for the upper flight, and ensure they meet 46 CFR 72.05-20, (n) and (o) in particular.

C. Increase the height of the archway at frame eighteen (18), four (4) place, port and starboard sides, each end. Modify the deck cut out between frames thirty-six (36) to forty-two (42), four (4) places as per **WSF DWG 8306-640-003-01**.

D. Provide new handrails in kind to those shown in **WSF DWG 8306-658-025-01**, Items A-1 to all new stairs.

E. Provide new stiffeners equal to the existing and a minimum of twenty-four inches (24") long where they missing above and below stairs in new location.

F. Insert the web of frame forty-two (42), on inboard and outboard of all four (4) stair ways (eight (8) locations) from the intersection of the vehicle deck up twenty four inches (24").

G. Install new lighting as shown in the **WSF DWG 8306-658-092-01**.

H. Remove and reinstall interferences as necessary.

I. Grit blast the entire landing decks between the stair ways to SSPC-SP6, Commercial Blast Cleaning.

1. Prior to coating, conduct joint steel survey with the WSF Inspector.

2. Steel replacement is covered under separate Item.

NOTE:
If portable wheel blaster equipment is used, ensure all errant shot is removed from all surfaces prior to coating.

3. Apply one (1) coat of Sherwin-Williams, Seaguard 5000HS or 6000LT, Gray, 6-8 mils (DFT) to grit blasted prepared surfaces.

4. Apply one (1) coat of Sherwin-Williams, Seaguard 5000HS or 6000LT Off White, to a minimum 6-8 mils (DFT) to grit blasted and SSPC-SP 3 prepared surfaces per Item 57.

5. The back sides, corners and sharp edges of all angles, rat holes, scallops and beams shall be hand-striped, using the brush method, with an additional 6-8 mils (DFT) of Sherwin-Williams, Seaguard 5000HS or 6000LT, of a contrasting color.

6. Wash down all grit blast residues using Low Pressure Water Clean (LP WC) at 3,000 – 5,000 PSI. The intent of this Item is to wash surfaces after spot blasting and prime coating prior to top coating.

7. Apply one (1) full coat of, Sherthane 2, to obtain a minimum 2-4 mils (DFT), to cover, on all surfaces of Zone No. 7. Colors shall be as detailed in **Attachment No. 1**.

8. Apply Non-Skid Sherwin-Williams / American Safety AS-250 Haze Gray. Apply at 40 sq. ft. per gallon to non skid areas.

J. Install new full width stair treads and risers on all stairs in kind to those shown on **WSF DWG 8306-658-006-01,** Item FL-13.

K. Remove and reinstall all interferences, repaint and restore all damaged and disturbed areas associated with the work described in this section.

L. Ship check to insure that the hand pumps for the watertight doors are clear of interferences in this modification. If these hand pumps interfere, relocate the pumps and associated piping to an acceptable location. Prove proper operation of the watertight door to the WSF and USCG Inspectors.

24. VEHICLE DECK CREW SHELTER VENTILATION INSTALLATION {MAINTENANCE}

A. Install ventilation system in the existing crews shelter as shown on **WSF DWG 8303-658-01,2-02,** M/V SEALTH Crew Dayroom Main Car Deck Ventilation and **WSF DWG 8306-658-091-01,** M/V SEALTH Main Deck – End No, 1, Crew Space, Exhaust Fan, Motor Controller Wiring Diagram.

B. Remove and reinstall all interferences necessary to complete this Item.

C. Install new fan and Motor controller inside the Crew Space. Add remote shut down push button outside of the Crew Space as shown in **WSF DWG 8306-658-091-01**.

D. Prepare new and disturbed areas in way of this work on the interior of the space to an SSPC-SP 3, power tool cleaning. Coat with two (2) coats of INTERNATIONAL Intertuf 262 Epoxy, 3 mils (DFT) each; apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

E. Prepare new and disturbed areas in way of this work on the exterior of the space to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of Sherwin-Williams, Seaguard 5000HS or 6000LT, Gray, 6-8 mils (DFT), Apply top coat of, Sherthane 2, to obtain a minimum 2-4 mils (DFT).

25. FRESH WATER FLUSHING CONVERSION {MAINTENANCE}

A. Convert the existing salt water flushing system to a fresh water flushing system in accordance with **WSF DWG 8300X-198-59-01,** ISSAQUAH CLASS Fresh Water Flushing Conversion and **WSF DWG 8306-658-091-02,** M/V SEALTH Fresh Water Flushing Pump Motor Controller Wiring Diagram.

B. Remove and reinstall all interferences necessary to complete this Item.

C. Carry out the following preservation work on the sewage holding tanks. Other work in the sewage tanks associated with conversion to fresh water flushing is contained elsewhere in these Specifications and shall be coordinated with the preservation work.

1. Open access covers and upon completion of affiliated work close up using new fasteners, washers, grommets and gaskets. Clean, sanitize, and ventilate, the sewage holding tanks. The sewage holding tanks shall be cleaned, sanitized and certified to be gas and toxic vapor free, and certified "Safe for Workers and Safe for Hot Work". Maintain certificate until completion of all affiliated work.

NOTE:
Tanks will be pumped down to low suction prior to Vessel arriving at the shipyard; however some amount of sludge will exist in the tanks, which should be considered HAZARDOUS. The sludge may contain harmful bacteria and emit poisonous and flammable gasses. The Contractor shall take necessary safety and health procedures required during this work.

2. Provide new wash-down nozzles for the sewage tanks and accomplish other work for the freshwater flush conversion in accordance with **WSF DWG 8300X-198-59-01.** Remove existing piping and provide new piping.

D. Install all piping, pumps, valves, electrical wiring and switches, gages, gage glass, sewage tank flush nozzles, backflow preventers, fittings and equipment as required by the Drawings.

E. Prior to placing tanks in service, the entire potable water system, including the storage tanks, shall be cleaned, disinfected and flushed in strict accordance with the requirements of USCG and the WHO Guide to Ship Sanitation, Annex 1.

F. The potable water system shall be flushed sufficiently after disinfecting that water drawn from the most remote tap or faucet is free from all color or taste of paint, preservative, or disinfectant.

G. A signed "Certificate of Disinfection" shall be provided to the WSF Inspector prior to the system being placed in service and prior to the Vessel Redelivery date.

H. Test the new installation and all new piping as indicated in the General Notes. Conduct required testing in the presence of WSF and USCG Inspectors and the Vessel Staff Chief Engineer.

I. Prepare new and disturbed areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color. Any damaged coating in the potable water tank shall be prepared and coated to match existing coating.

26. AUTOMATIC DRAFT INDICATION SYSTEM INSTALLATION (ADIS) {NAVIGATION EQUIPMENT}

NOTE:
Wherever new penetrations are required they shall maintain the watertight and fire ratings of the bulkhead or deck being penetrated. New Multi-Cable Transits shall be Nelson type. Test all deck, bulkhead and hull penetrations in company with and to the satisfaction of the USCG and WSF Inspector, and the Staff Chief Engineer.

A. Install the WSF furnished Automatic Draft Indication System as indicated on **WSF DWG 8306-607-095-01,** MV SEALTH Automatic Draft Indication System Electrical Installation and **WSF DWG 8306-607-002-01,** MV SEALTH Automatic Draft Indication System Hull Installation and this Specification.

B. Remove and reinstall all interferences necessary to complete this Item.

C. All new steel will be prepared to an SSPC-SP 10, Near White Blast Cleaning. Existing paint surfaces affected by this work will be prepared to a SSPC-3, Power Tool Cleaning.

D. Fabricate and install transceiver support tubes, cable guards and junction boxes in accordance with **WSF DWG 8306-607-002-01**, MV SEALTH Automatic Draft Indication System Hull Installation.

E. Install four (4) WSF furnished ultrasonic transducers and mounting hardware, in accordance with **WSF DWG 8306-607-002-01**, MV SEALTH Automatic Draft Indication System Hull Installation.

F. Within the first three (3) days of Vessel arrival, provide WSF Inspector with the exact length of Transceivers Support Pipe's that will be installed through the "guard".

G. Install one (1) WSF furnished pilothouse display unit in each pilothouse in accordance with **WSF DWG 8306-607-095-01,** MV SEALTH Automatic Draft Indication System Electrical Installation. Install one (1) WSF furnished system central processing unit in pilothouse No. 1 in accordance with **WSF DWG 8306-607-095-01,** MV SEALTH Automatic Draft Indication System Electrical Installation. Install one (1) WSF furnished draft indicator system printer on the chart table in pilothouse No. 1 as designated by the WSF Inspector.

H. Install black phenolic nameplates with white lettering on all electrical enclosures. Lettering shall be at least ⅜ inch high.

I. Install and terminate all interconnecting cables, breakers, and other electrical hardware in accordance with **WSF DWG 8306-607-095-01**, MV SEALTH Automatic Draft Indication System Electrical Installation. Band, megger, and tag the cable in accordance with **Attachment No. 2**, WSF ELECTRICAL INSTALLATION SPECIFICATION.

J. After equipment installation is complete, obtain the services of Weir-Jones Engineering Ltd, the equipment vendor, to accomplish system startup/commissioning, and necessary calibrations. This shall be witnessed by the WSF Construction Master.

K. Conduct a satisfactory operational test to the satisfaction of the Weir-Jones Engineering LTD, the Vendor Representative, the WSF and USCG Inspectors. Provide the WSF Inspector with three (3) written copies of the test results.

L. Prepare new and disturbed areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of Sherwin-Williams, Seaguard 5000HS or 6000LT, Off White, to obtain a minimum of, 4-8 mils (DFT) to all prepared surfaces. Hand stripe all edges. Apply a topcoat of Sherwin-Williams, Sherthane 2K, 2-4 mils DFT, to cover, on all surfaces. Color same as existing one.

27. AUTOMATIC IDENTIFICATION SYSTEM (AIS) INSTALLATION {NAVIGATION EQUIPMENT}

NOTE:
Wherever new penetrations are required they shall maintain the watertight and fire ratings of the bulkhead or deck being penetrated. New Multi-Cable Transits shall be Nelson type. Test all deck, bulkhead and hull penetrations in company with and to the satisfaction of the USCG and WSF Inspector, and the Staff Chief Engineer.

A. Install and connect new cables and components required by this Item. Insure cables and wires installed by this Item are run and marked, and continuity tests are made in accordance with **Attachment No. 2,** WSF ELECTRICAL MODIFICATION SPECIFICATION.

B. Remove and reinstall all interferences necessary to complete this Item.

C. Two (2) AIS antenna foundations have been previously installed in accordance with **WSF DWG 8300-624-003-01**, ISSAQUAH CLASS FERRIES AIS Antenna Foundation Installation & Details.

D. Provide and install circuit breakers in each pilothouse 24 VDC panels in accordance with **WSF DWG 8306-657-0954-01**, IC Battery Charger Replacement Electrical Installation.

E. Provide and install Hoffman boxes with relay and relay socket and terminal strip in each pilothouse in accordance with **WSF DWG 8300-624-094-01**, ISSAQUAH CLASS AIS Electrical Installation. Provide and install phenolic label plate for 24V DC Relay box.

F. Provide and pull new cable; in accordance with **WSF DWG 8300-624-094-01**, ISSAQUAH CLASS AIS Electrical Installation. Band, megger, and tag the cable in accordance with **Attachment No. 2**, WSF ELECTRICAL INSTALLATION SPECIFICATION. Wherever new penetrations are required they shall maintain the watertight and fire ratings of the bulkhead or deck being penetrated. Existing non-poured bulkhead and deck penetrations may be reused. New cable shall be run to AIS panels or enclosures and shall be pulled through panel/enclosure cable entry point. Provide a six-foot (6') coil of cable at each un-terminated end to permit termination by WSF Contract Electricians.

G. WSF Contract Electricians will terminate and connect all cables run by the Contractor incident to this Item.

H. Prepare new and disturbed areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of Sherwin-Williams, Seaguard 5000HS or 6000LT, Off White, to obtain a minimum of, 4-8 mils (DFT) to all prepared surfaces. Hand stripe all edges. Apply a topcoat of Sherwin-Williams, Sherthane 2K, 2-4 mils DFT, to cover, on all surfaces. Color same as existing one.

28. SATELLITE COMPASS ANTENNA RELOCATION
{NAVIGATION EQUIPMENT}

A. Relocate the FURUNO Satellite Compass Antenna, Model SC-110 in accordance with **WSF DWG 8306-647-015-01,** MV SEALTH Antenna Foundation for SC110 Satellite Compass Construction Details and **WSF DWG. 8306-647-094-01,** M/V SEALTH, Satellite Compass Installation Wiring Diagram and below Specification.

B. Remove and reinstall all interferences necessary to complete this Item.

C. Remove the existing mast and foundation in its entirety including all cable penetrations and cables.

D. Relocate the Satellite Compass Antenna from its present location to the top of the existing mast on a Contractor fabricated mast. Orientation of the antenna to the Vessel fore and aft line is critical.

E. In the deckhouse and pilothouse, remove the overhead and insulation as required to weld the transits and to run the wiring. Restore all removals upon completion of testing.

F. Install cable and cable runs from new antenna down the mast, through the overhead of the pilothouse and into the aft bulkhead of the overhead of the Fan Room. Install new transit watertight penetrations in the overhead of the deckhouse of the size and type to allow the antenna leads to pass through.

NOTE:
Wherever new penetrations are required, they shall maintain the watertight and fire ratings of the bulkhead or deck being penetrated. Existing non-poured bulkhead and deck penetrations may be reused. New Multi-Cable transits shall be Nelson type. Test all deck, bulkhead and hull penetrations in company with and to the satisfaction of the WSF and USCG Inspector, and the Vessel Staff Chief Engineer.

G. Conduct Power Meter test of all new cabling to insure the installation meet all requirements. Provide WSF Inspector with three (3) copies of test results.

H. Hook up the new antenna cable to the existing SC-1101, Processor unit in the void space below the Pilot House.

I. Install electronics fiddle board in the voids below each pilot house in the location as directed by the WSF Inspector. The fiddle board shall be constructed of 3 foot by 4 foot, 3/16 plate and adequately support from the deck to the overhead.

J. Prepare all surfaces affected by this work to an SSPC-SP3, Power Tool Cleaning. Apply one (1) coat of Sherwin-Williams, Seaguard 5000HS or 6000LT, Off White, to obtain a minimum of, 4-8 mils (DFT) to all prepared surfaces. Hand stripe all edges. Apply a topcoat of Sherwin-Williams, Sherthane 2K, 2-4 mils DFT, to cover, on all surfaces. Color same as existing one.

29. RELOCATE RADAR AND MISCELLANEOUS ANTENNAS
{NAVIGATION EQUIPMENT}

A. Modify the No. 2 End and No. 1 End lower radar antenna foundations as shown on **WSF DWG 8306-**661**-094-01,** M/V SEALTH Antenna Arrangement and **WSF DWG 8306-661-094-02,** M/V SEALTH Antenna Rip Out and Relocation, and **WSF DWG 8306-658-015-01,** M/V SEALTH DOCKSIDE, Navigation Equipment Foundations.

B. Lower the existing manual search lights on the No. 2 End and No. 1 End Pilot House tops to the height as shown on **WSF DWG 8306-661-094-01**.

C. Remove the existing lower radar antennas as in **WSF 004**, Removal Categories and Requirements, **Category C,** for later reinstallation, as shown on **WSF DWG 8306-661-094-02,** M/V SEALTH Antenna Rip Out and Relocation.

D. The support tube and the mechanical linkage for the existing manual search lights shall be modified to allow the light to be lowered to the height as shown on **WSF DWG 8306-661-094-01,** while maintaining the current control handle to Pilot House deck height.

1. The searchlight assemble must be maintained watertight.

2. Upon completion of modification the search lights shall be hose tested with no leaks allowed.

E. Remove and reinstall all interferences including but not limited to the pilot house false overhead, electrical cables and pilot house overhead insulation.

F. Reinstall the radar antennas using new 316 S/S bolts with nylok nuts.

G. Remove antennas that are no longer used as shown on **WSF DWG 8306-661-094-02,** M/V SEALTH Antenna Ripout and Relocation. Removal shall include the antennas, cables, and foundations. All unused penetrations shall be capped or removed and inserted.

H. Relocate antennas as shown on **WSF DWG 8306-661-094-02,** M/V SEALTH Antenna Rip out and Relocation. Relocation shall include the removal of the existing antennas, foundations, and cables. All unused penetrations shall be capped or removed and inserted. Removed antennas shall be removed as **Category C.** Reinstall the antennas as shown on **WSF DWG 8306-661-094-02,** M/V SEALTH Antenna Rip out and Relocation and **WSF DWG 8306-661-094-01, M/V SEALTH** Antenna Arrangement. Install new penetrations, wire ways and cables from the relocated antennas to the existing equipment they service.

I. Prepare new and disturbed areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of Sherwin-Williams, Seaguard 5000HS or 6000LT, Off White, to obtain a minimum of, 4-8 mils (DFT) to all prepared surfaces. Hand stripe all edges. Apply a topcoat of Sherwin-Williams, Sherthane 2K, 2-4 mils DFT, to cover, on all surfaces. Color same as existing one.

J. Replace all disturbed structural, thermal, and acoustical insulation to match original installation. Repair all interior finish coatings and linings damaged by the Work to match original finish and treatment.

30. PILOTHOUSE 24 VOLT DC SYSTEM MODIFICATONS

{NAVIGATION EQUIPMENT}

A. Modify the existing 24 volt DC System for Pilot Houses No. 1 & No. 2 as shown on **WSF DWG 8306-554-090-02** M/V SEALTH Pilothouse 24 VDC Distribution System Modification, **WSF DWG 8306-658-095-02,** M/V Sealth Indicator and Alarm System Elementary Wiring Diagram and this Specification.

B. Remove and reinstall all interferences necessary to complete this Item including but not limited to insulation, vent ducting, piping and wire ways.

C. Temporarily remove 24VDC power panels DC24-1 and DC24-2 from their existing foundation. Remove the existing foundations and install new fiddle boards to allow the installation of the existing power panels, new panels and equipment as shown on **WSF DWG 8306-554-090-02.** The fiddle board shall be constructed of 3/16 plate and adequately support from the deck to the overhead.

D. Reinstall the previously removed 24 VDC power panels on the new fiddle board.

E. Modify the existing 24VDC power panels DC24-1 and DC24-2 located in the pilothouse fan spaces as shown in **WSF DWG 8306-554-090-02.**

F. Install new power panels and equipment as shown on **WSF DWG 8306-554-090-02,** on the new fiddle boards.

G. Install new ground detection systems as shown in **WSF DWG 8306-554-090-02.**

H. Install the alarm systems for the existing 24 volt DC Battery Charges as shown in **WSF DWG 8306-554-090-02** and **DWG 8306-658-095-02.**

I. Modify the existing **Rochester** Instruments alarm module in EOS as shown in **DWG 8306-658-095-02.**

J. Prepare new and disturbed areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

K. Replace all disturbed structural, thermal, and acoustical insulation to match original installation. Repair all interior finish coatings and linings damaged by the Work to match original finish and treatment.

31. INSTALL DECK HOUSE EXTENSION {SECURITY}

A. Install a new electronic equipment enclosure shown on **WSF DWG 8306-639-003-01,** M/V SEALTH Electronic Equipment Room Structural Arrangement and Details, **WSF DWG 8306-639-012-01**, M/V SEALTH Electronic Equipment Room Ventilation Arrangement and Details and **WSF DWG 8306-639-090-01,** M/V SEALTH Electronic Equipment Room Electrical Installation Navigation/Bridge Deck, No. 2 End and this Specification.

B. Electrical installation for the new enclosure shall be in accordance with WSF **DWG 8306-639-090-01.**

C. Remove and reinstall all interferences necessary to complete this Item.

D. Relocate the existing access ladder including the safety lines from its present location on the crews quarters aft bulkhead to the opposite side of the crews quarters aft bulkhead as directed by the WSF Inspector.

E. Provide one (1) new 30 x 81 weather access door as shown on **WSF DWG 8306-639-003-01**, M/V SEALTH Electronic Equipment Room Structural Arrangement and Details and shall be prepared to accept a Best Access Systems Cylinder Lock using Best Access Systems Template number W13, Rev B.

F. Install a WSF furnished 15 lbs, U.S. Coast Guard Approved CO2 fire extinguisher in the Electronic Equipment Room in a location designated by the WSF Inspector.

G. Install the ventilation system for the Electronic Equipment Room as shown on **WSF DWG 8306-639-012-01**, M/V SEALTH Electronic Equipment Room Ventilation Arrangement and Details.

H. Install two inch (2") thick vinyl covered USCG approved hull board insulation on insulation pins, nine inches (9") on center, to the overhead and exterior bulkheads. Place one inch (1") thick vinyl covered USCG approved insulation around all stiffeners. Tape all joints. Weld a two inch (2") high bounding bar to the deck edge.

I. Replace all disturbed structural, thermal, and acoustical insulation to match original installation.

J. Prepare all surfaces affected by this work to an SSPC-SP3, Power Tool Cleaning. Apply two (2) coats of Sherwin-Williams, Seaguard 5000HS or 6000LT, Off White, to obtain a minimum of, 3mils (DFT) each to all prepared surfaces. Hand stripe all edges. Apply a topcoat of Sherwin-Williams, Sherthane 2K, 2-4 mils DFT, to cover, on all surfaces. Color same as existing one.

K. Prepare and coat the top of the new structure to match that of the existing house top that it abuts.

32. SECURITY SYSTEM INSTALLATION

{SECURITY}

A. Install security modifications shown on **WSF DWG 8306-658-090-01,** M/V SEALTH Electrical One-Line Diagram, **WSF DWG 8306-639-095-01,** M/V SEALTH Homeland Security Plan, **WSF DWG 8000-639-095-01,** All Vessels Homeland Security Typical Wiring Diagram Standard, **WSF DWG 8306-639-095-02,** M/V SEALTH Homeland Cabling & Wiring Diagram, and **WSF DWG 8000-639-095-02**. All Vessels Homeland Security Plan Typical Foundations Standard, and **WSF DWG 8306-639-095-03,** Homeland Security Plan Misc. Foundations.

NOTE:
WSF supplied Items on DWG 8306-639-095-02.

NOTE:
Wherever new penetrations are required they shall maintain the watertight and fire ratings of the bulkhead or deck being penetrated. Existing non-poured bulkhead and deck penetrations may be reused New Multi-Cable Transits shall be Nelson type. Test all deck, bulkhead and hull penetrations in company with and to the satisfaction of the USCG and WSF Inspector, and the Staff Chief Engineer.

B. Remove and reinstall all interferences necessary to complete this Item.

C. Fabricate equipment cabinet and electronic security devices foundations and camera mounts in the locations shown on **WSF DWG 8306-639-095-01**, and **WSF DWG 8000-639-095-02**.

D. Add ground detection as indicated on **WSF DWG 8306-658-090-01**.

E. Install new cables required by **WSF DWG 8306-658-090-01**, **WSF DWG 8306-639-095-01**, **WSF DWG 8000-639-095-01,** and **WSF DWG 8306-639-095-02**. Insure cables and wires installed by this Item are run and marked, and continuity tests are made in accordance with **WSF 003,** General Construction Requirements. Prior to installing any fiber optic cables perform an OTDR test and submit results to the WSF Inspector. Perform a second OTDR on the fiber cables after installation. Compare the results to the pretest and submit results to the WSF Inspector.

F. Obtain the services of ABSCO Alarms, Phone: (206) 367-1166 to make all connections and demonstrate the operation of the system.

G. Install stud runs and penetrations, run cables and install the security hardware and electrical components.

H. Replace all disturbed structural, thermal, and acoustical insulation to match original installation.

I. Remove existing lock boxes form the security cages leading up to the pilothouses and install new WSF provided lock boxes.

J. Prepare all surfaces affected by this work to an SSPC-SP3, Power Tool Cleaning. Apply one (1) coat International Intertuf 262, Buff to a minimum to obtain 6 to 8 mils (DFT) to all new surfaces and prepared surfaces. Hand-stripe all edges. Top-coat with Intercare 755, Blue White, to a minimum of 2 mils (DFT) to match surrounding.

33. LOCAL AREA NETWORK INSTALLATION
{IT}

A. Install new fiber optics, LAN and antennas as shown on **WSF DWG 8306-642-095-01,** M/V SEALTH Super-Lan/Security & Surveillance/ Wireless Over Water Installation. Develop cable routing for the fiber optic and Cat 5E cables.

NOTE:
Wherever new penetrations are required they shall maintain the watertight and fire ratings of the bulkhead or deck being penetrated. Existing non-poured bulkhead and deck penetrations may be reused. New Multi-Cable Transits shall be Nelson type. Test all deck, bulkhead and hull penetrations in company with and to the satisfaction of the USCG and WSF Inspector, and the Staff Chief Engineer.

B. Remove and reinstall all interferences necessary to complete this Item.

C. Prior to installing any fiber optic cables perform an OTDR test and submit results to the WSF Inspector. Install new cables required by **WSF DWG 8306-642-095-01**. Insure cables and wires installed by this Item are run and marked, and continuity tests are made in accordance with **WSF 003,** General Construction Requirements. Perform a second OTDR on the fiber cables after installation. Compare the results to the pretest and submit results to the WSF Inspector.

D. Provide and install cable and power to the UPS's from the distribution panels. Cable shall be terminated as a standard duplex outlet.

E. Install foundations and antennas as required on **WSF DWG 8306-642-095-01,** welding shall be in accordance with **WSF 003**, General Construction Requirements. Foundations shall be installed for all Items identified as Owner Furnished Equipment (OFE) 1, 2, and 3.

F. Install coax from the radio enclosures to the antenna foundations. Terminate and end seal spare lengths of cable.

F. WSF will provide the services of a licensed Electronics Contractor to mount the OFE equipment, perform final terminations and system check out.

G. Prepare all interior surfaces affected by this work to an SSPC-SP3, Power Tool Cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

H. Prepare all exterior surfaces affected by this work to an SSPC-SP 3, Power Tool Cleaning. Coat with one (1) coat of Sherwin-Williams, Seaguard 5000HS or 6000LT, Off White, to obtain a minimum of, 4-8 mils (DFT) to all prepared surfaces. Hand stripe all edges. Apply a topcoat of Sherwin-Williams, Sherthane 2K, 2-4 mils DFT, to cover, on all surfaces. Color same as existing one.

34. CELLULAR TELEPHONE INSTALLATION {IT}

A. Install new Cellular Telephone System as shown on **WSF DWG 8306-642-095-02,** M/V SEALTH Cellular Phone Installation and **WSF DWG 8306-661-094-01,** M/V SEALTH Antenna Arrangement. Develop cable routing for the Cat 5E cables.

NOTE:
Wherever new penetrations are required they shall maintain the watertight and fire ratings of the bulkhead or deck being penetrated. Existing non-poured bulkhead and deck penetrations may be reused. New Multi-Cable Transits shall be Nelson type. Test all deck, bulkhead and hull penetrations in company with and to the satisfaction of the USCG and WSF Inspector, and the Staff Chief Engineer.

B. Remove and reinstall all interferences necessary to complete this Item.

C. Install new cables required by **WSF DWG 8306-642-095-02.** Insure cables and wires installed by this Item are run and marked, and continuity tests are made in accordance with **WSF 003,** General Construction Requirements.

D. Remove all equipment from the existing Cell Phone enclosure as **WSF 004, Category A** and return to the WSF Inspector. Existing cables feed to EOS shall be retained in accordance with **WSF DWG 8306-642-095-02**.

E. Install foundations and enclosures in accordance with on **WSF DWG 8306-642-095-02**, welding shall be in accordance with **WSF 003,** General Construction Requirements**.**

F. Remove existing antennas; install new antenna foundations and antennas in accordance with **WSF DWG 8306-661-094-01**.

G. Items 18 – 22 of the material list on **WSF DWG 8306-642-095-02** shall be provided to the WSF Inspector.

H. WSF will provide the services of a WSF Contractor to mount the equipment, perform final terminations and system check out.

I. Prepare all surfaces affected by this work to an SSPC-SP3, Power Tool Cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

35. STEERING SYSTEM UPGRADES

{MAINTENANCE}

NOTE:
This upgrade applies to both steering gears located in End 1 and End No. 2.

A. Remove valves, pipes and hoses in accordance with **WSF DWG 8300-662-081-01,** ISSAQUAH CLASS STEERING SYSTEM UPGRADE.

B. Remove and reinstall all interferences necessary to complete this Item.

C. Install new hoses, pipes and fittings in accordance with **WSF DWG 8300-662-081-01.** No spilt hose fittings or threaded pipe joints are allowed**.**

D. Clean by acid pickling internal surfaces of newly fabricated hydraulic fluid piping and then oil to prevent corrosion. After piping systems have been pickled and oiled, all open ends shall be sealed tight using metal or plastic caps, plugs and blanks.

E. Overhaul and bench test and set cross-port relief valves to 2000 PSI prior to installation.

F. Bench test and set system relief valves to 1850 PSI. Test to be witnessed by USCG and WSF Inspectors and the Staff Chief Engineer.

G. Hydrostatically test system with cylinder float valve open, relief valves jumpered out of the system, and plugs in cylinder end of hoses (4 places) to 3000 PSI for 15 minutes. No leaks are allowed.

H. Clean and flush all new and existing system piping, tubing, and appurtenances through ten (10) Micron Filter Cartridge(s) to meet the Class eight (8) requirements of NAS 1638 (see **TABLE 8-1** below for particulate contamination). All associated equipment shall be thoroughly cleaned after fabrication and prior to installation in the Vessel. After installation, each new or modified system shall be thoroughly cleaned and flushed of all foreign material utilizing the normal system medium or a WSF approved substitute. When an acceptable level of cleanliness has been obtained, the flush has been secured, and the system has cooled down; remove the flushing oil from the system. Refill the system to its normal operating level with new hydraulic oil, filtered through a ten (10)-micron filter.

TABLE 8-1

Maximum Contamination Limits Per 100 Milliliters (Class 8)

PARTICLE SIZE RANGE (MICRONS)	MAXIMUM NUMBER OF PARTICLES PER RANGE
5 to 15	64,000
15 to 25	11,400
25 to 50	2,025
50 to 100	360
Over 100	64

I. Fill system with clean hydraulic oil, CHEVRON AW Hydraulic 32.

J. Set counter balance valves to approximately 100 PSI using method shown on **WSF DWG 8300-662-081-01.**

K. Prepare new and disturbed areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

L. Conduct a test of the system during Dock and Sea trials.

36. CPP HYDRAULIC SYSTEM VIBRATION ISOLATION {MAINTENANCE}

A. Remove and reinstall all interferences as necessary to complete the work.

NOTE:
This upgrade applies to both CPP Systems located in End No. 1 and in End No. 2.

B. Remove valves, pipes and hoses in accordance with **WSF DWG 8300-662-053-01,** ISSAQUAH CLASS CPP Hydraulic Power Supply Vibration Isolation.

C. Remove existing pumps from the existing motors as **WSF 004, Category A** as shown on **WSF DWG 8300-662-053-01**, and drain and hard blank all openings and turn over to the Vessel Staff Chief Engineer.

D. Install new pumps onto the existing motors using new hardware as shown on **WSF DWG 8300-662-053-01**, this will require the removal, clocking 90 degrees and reinstallation of the of the motor to pump adapter to ensure inlet and outlet ports are parallel to the foundation. The motor shaft may require hand grinding to shorten the shaft approximately 1/32" inches.

E. Remove existing pump motor foundations and fabricate and install new foundations as shown on **WSF DWG 8300-662-053-01**.

F. Install new hoses, pipes and fittings in accordance with **WSF DWG 8300-662-053-01**.

G. Reinstall existing equipment as shown on **WSF DWG 8300-662-053-01**, using new gaskets, o-rings, seals and fasteners. All new gaskets, o-rings, seals and fasteners shall be in accordance with the requirements of manufacture of each Item.

H. Modify deck plates as necessary to complete the modifications to restore them to their existing condition.

I. Clean by acid pickling internal surfaces of newly fabricated hydraulic fluid piping and then oil to prevent corrosion. After piping systems have been pickled and oiled, all open ends shall be sealed tight using metal or plastic caps, plugs and blanks.

J. Clean and flush all new and existing system piping, tubing, and appurtenances through ten (10) Micron Filter Cartridge(s) to meet the Class eight (8) requirements of NAS 1638 (see TABLE 8-1 below for particulate contamination). All associated equipment shall be thoroughly cleaned after fabrication and prior to installation in the Vessel. After installation, each new or modified system shall be thoroughly cleaned and flushed of all foreign material utilizing the normal system medium or a WSF approved substitute. When an acceptable level of cleanliness has been obtained, the flush has been secured, and the system has cooled down; remove the flushing oil from the system.

TABLE 8-1	
Maximum Contamination Limits Per 100 Milliliters (Class 8)	
PARTICLE SIZE RANGE (MICRONS)	**MAXIMUM NUMBER OF PARTICLES PER RANGE**
5 to 15	**64,000**
15 to 25	**11,400**
25 to 50	**2,025**
50 to 100	**360**
Over 100	**64**

K. Hydrostatically test the system as shown on **WSF DWG 8300-662-053-01**.

L. Refill the system to its normal operating level with new WSF provided hydraulic oil, filtered through a 10-micron filter.

M. Prepare new and disturbed areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

N. Conduct an operational test of the system during Dock and Sea trials.

37. ENGINE ROOM ACOUSTIC ENCLOSURE
{NOISE CONTROL}

A. Remove and reinstall all interferences as necessary to complete the work.

B. Fabricate and install a sound-proofed enclosure for the crew to access the engineer's day room from the engine room as shown on **WSF DWG 8306-583-007-01**, MV SEALTH, Acoustic Enclosure in Way of the Engineer's Day Room / ER No. 1 Arrangement and Details. The boundary between the new enclosure and the engine room shall be constructed to B-15 fire rating.

C. The new steel structure shall consist of the following components:

1. A new structural frame to contain and support the new acoustical panels with structural supports below. Existing vertical grating supports shall be used where possible to avoid welding on the tank top.

2. A new deck section to support the new floating deck of the enclosure.

D. Provide and erect temporary protection for all equipment in the engine rooms that may be contaminated or damaged during this work. The protection shall include, but not be limited to, fabric and temporary wooden structures. No parts of any existing equipment are to be used as footholds or supports for personnel during this work. After the completion of the installation, remove all temporary protections and restore the work areas to their original condition.

E. The Contractor may temporarily remove existing equipment, fixtures, piping and electrical cables in order to carry out the work. Reinstall all temporarily removed Items to their original location. All Items that may interfere with or be damaged by the work to be performed shall be protected or removed and reinstalled. These Items may include, but are not limited to, piping, insulation, ceiling panels, light fixtures, cableways and bulkhead-mounted equipment inside the engine room, and Day Room. Temporarily removed Items shall be reinstalled by the same method to their previous location. Equipment damaged in the removal process shall be repaired, replaced or restored to original condition.

F. Modify and/or relocate the existing inclined ladder between the dayroom deck and the engine room floor plate level to suit the new arrangement, as shown in **WSF DWG 8306-583-007-01**. Provide new pad eyes and deck reinforcements for the inclined ladder at its new location.

G. Remove the existing engine room floor-plate and associated supports in the area of the new enclosure. Relocate one (1) existing light fixture in way of the new enclosure and install two (2) additional light fixtures one (1) on the exterior of the enclosure and one (1) inside to be fed from nearest junction box from circuit 6EL5.

H. Relocate the existing carbon dioxide, fuel oil piping lines piping and control air line in way of the new enclosure to a location just above of the enclosure.

I. Provide and install new joiner work inside the new enclosure as shown in **WSF DWG 8306-583-007-01**. The joiner systems shall be installed per Manufacturer's recommended details. In particular, the interface between the joiner ceiling and joiner lining is critical to the overall sound attenuation. The new joiner lining shall be Norac Q-600-50 mm, or equal, with a B-15 fire rating and 42-db sound reduction rating.

J. Provide new joiner ceiling inside the new enclosure. The new joiner ceiling shall be compatible with the bulkhead panels with a B-15 fire rating and 42 db sound reduction rating.

K. Provide an A-60 floating floor on top of the new platform as shown in **WSF DWG 8306-583-007-01.** The floating floor shall be Norac F-300, or equal, with an A-60 rating. The floating floor shall be made of panels that are 1970 mm by 300 mm, tack-welded on 10- inch centers. The top surface of the panels shall be 3 mm galvanized steel sheets. The seams in the floating floor shall be caulked and gray dielectric matting installed.

L. Provide an acoustical door in the inboard bulkhead of the new enclosure. The door shall be an A-60 weather-tight door as manufactured by McGeoch Marine Limited. This Manufacturer is specified due to superior acoustic properties of the product. Equal acoustic performance shall be demonstrated for any proposed equal. The door shall be fitted with gaskets and a closure device. The leaf of the new door shall swing into the enclosure. Provide hinges Lawrence #8881151-32-D heavy-duty ball bearing 4½x 4½. Provide lockset Best 34H-14J626-mortise type. Provide door closer LCM Model 4041.

M. Modify the existing inboard surface of the engine room day room to accept the new enclosure. The existing insulation contains lead sheathing. Portions of this insulation are to be removed to allow structural fit-up and welding. The remaining insulation shall be preserved. Upon completion of the installation the bulkhead shall be repaired to original condition. All material and workmanship shall comply with the U.S. Coast Guard requirements. Furnish all necessary documentation to demonstrate such compliance.

N. Modify the floor plates and associated supports in the engine room to suit the new enclosure.

O. Prepare new and disturbed areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

38. ENGINE CONTROL ROOM VENTILATION MODIFICATIONS {MAINTENANCE}

A. Modify the existing Engine Control room ventilation as shown on **WSF DWG 8300-658-01,** ISSAQUAH CLASS EOS Ventilation and Air Conditioning Modifications.

B. Remove and reinstall all interferences necessary to complete the work.

C. Prepare new and disturbed areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

39. CONTROL SYSTEM INDICATOR AND ALARM SYSTEM MODIFICATIONS

{MAINTENANCE}

A. Remove and reinstall all interferences as necessary to complete the work.

B. Modify the existing Alarm and Indicating System as shown on **WSF DWG 8306-658-095-02,** M/V SEALTH Indicator, Alarm System Elementary Wiring Diagram, and this Specification.

C. Install new SIEMENS Universal Logic Module as shown in **WSF DWG 8306-658-095-02**, the location of the Module in EOS Console will be as directed by the Vessel Staff Chief Engineer. WSF will provide the service of a WSF Contractor to program the controller upon completion of installation.

D. Install all necessary equipment and cabling as shown in **WSF DWG 8306-658-095-02.**

E. Remove relays K1 & K3 from the NO1 Pilot House Control Consol and relays K2 & K4 from the No. 2 Pilot House Control Consol as **WSF 004, Category A** as shown in **WSF DWG 8306-658-095-02**, and return to the Vessel Staff Chief Engineer.

F. Reconnect the Alarm Silence Pushbutton, Sonoalert, and PLC Fail/Control Voltage Low Alarm Indicator Light in both pilot house consoles as shown in **WSF DWG 8306-658-095-02**.

G. Prepare new and disturbed areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

40. GENERAL ALARM ELECTRICAL MODIFICATION AND 120 VOLT DC BATTERY RENEWAL

{MAINTENANCE}

A. Modify the existing General Alarm Battery Charging System Alarm as shown on **WSF DWG 8306-658-095-02,** M/V SEALTH Indicator and Alarm System Elementary Wiring Diagram, **WSF DWG 8306-658-095-01,** M/V SEALTH General Alarm System Elementary & Isometric Wiring Diagram and this Specification.

B. Remove and reinstall all interferences as necessary to complete the work

C. Install the new alarm systems as shown in **WSF DWG 8306-657-095-01**, and **WSF DWG 8306-658-095-02** and **WSF DWG 8306-658-095-01**.

D. Install new cable ways and MCTs to route new cables as shown on **WSF DWG 8306-658-095-01,** Special Note 17**.**

E. Modify the existing Rochester Instruments alarm module in EOS as shown in **DWG 8306-658-095-02.**

F. Remove and properly dispose of the existing General Alarm batteries from the Battery Room. Provide WSF with documentation confirming the proper disposal of these Nickel-Cadmium batteries.

G. Provide and install new batteries and interconnects of the type shown on **WSF DWG 8306-658-095-01,** and the Manufacturer's recommendations. Use battery Manufacturer-approved connectors and associated hardware to connect battery cells. Seal the ends of each battery cable. Provide the services of the battery Manufacturer's Representative to inspect and approve in writing the battery installation. Provide three (3) copies of the approval documentation to the WSF Inspector.

H. Battery terminal jumpers shall be made of stranded cable and shall have their ends terminated with closed (ring) compression connectors and heat shrink tubing seals. Each battery cell shall be blocked using non-hygroscopic, non-conducting, alkaline resistant HMW plastic. No part of the battery shall be in contact with conductive materials, whether painted or not.

I. Prepare new and disturbed areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

41. 24 VDC POWER SUPPLY SYSTEM MODIFICATIONS {MAINTENANCE}

A. Remove existing I.C. Battery Charging System and PCS Battery Charging System including batteries and their foundations as shown on **WSF DWG 8306-585-096-11 M/**V SEALTH I.C. & PCS Battery Systems Rip Out. Remove not used alarm circuits as directed in **WSF DWG 8306-658-095-02,** M/V SEALTH Indicator and Alarm System Elementary Wiring Diagram and this Specification. Existing PCS Battery Room shall be renamed as Engine Room Spare Parts Storage.

B. In Engine Room Diesel Control Power Supply System remove existing batteries, disconnect switches and cables as shown on **WSF DWG 8306-585-095-12,** M/V SEALTH Diesel Control Power Supply Systems installation Rip Out in preparation for modifications to the 24 VDC power supply system.

C. Remove and reinstall all interferences necessary to complete this Item including but not limited to insulation, vent ducting, piping, MCT's and wire ways.

D. Modify the existing Diesel Control Power Supply system by providing new material and make installation **changes** as directed in **WSF DWG 8306-658-096-01,** M/V SEALTH Eng Rm 24 VDC Power Supply System Installation.

E. Remove the existing IC and PCS Battery Chargers as in **WSF 004, Category A** and turn them to over to the Staff Chief Engineer as directed in **WSF DWG 8306-585-096-11, M/**V SEALTH, I.C. & PCS Battery Systems Rip Out.

F. Remove and properly dispose of the existing lead acid batteries, install new batteries of larger capacity using new interconnect cables.

G. Provide new suitable foundations for the new battery boxes and incorporate tie down straps to allow for battery maintenance.

H. For Engine Room battery chargers, readjust the Float/Boost and alarm settings for the new gel type batteries. Contact SENS Stored Energy Systems Manufacturer for resetting procedure or service. Provide WSF with a report on the new settings.

I. In the Ships Service Switchboard install a new 24 VDC battery voltage indication system as shown in **WSF DWG 8306-585-089-02,** MV. SEALTH **,** Ship Service Switchboard Arrangement **and WSF DWG 8306-585-089-03.** MV. SEALTH Generator Semi-Manual Paralleling System Connection Diagram. Use existing meter and indication lights as directed.

J. Correct existing alarm systems wiring for the removed Battery Chargers as shown **WSF DWG 8306-658-095-02.**

K. Modify the existing Rochester Instruments alarm module in EOS as shown in **WSF DWG 8306-658-095-02**.

L. Repair all paint damaged by this work to match the existing coating.

M. Replace all disturbed structural, thermal, and acoustical insulation to match original installation. Repair all interior finish coatings and linings damaged by the Work to match original finish and treatment.

42. SHORE POWER UPGRADE
{MAINTENANCE}

A. Modify the Shore Power System and Ships Service Switchboard as shown on **WSF DWG 8306-585-089-03,** M/V SEALTH Generators Semi-Manual Paralleling System Wiring Diagram, **WSF DWG 8306-585-089-04**, M/V SEALTH Ships Service Switchboard Control Wiring Diagram Mods, **WSF DWG 8302-585-089-02,** M/V SEALTH Ship Service Switchboard Arrangement, and **WSF DWG 8306-658-095-02**, M/V SEALTH Indicator and Alarm System Elementary Wiring Diagram.

B. Remove and reinstall all interferences necessary to complete this Item.

C. Install a new shore power circuit breaker including all necessary cable as shown in **WSF DWG 8306-585-089-03, WSF DWG 8306-585-089-04,** and **WSF DWG 8302-585-089-02**. The **breaker** shall have copper lugs capable of receiving a 4/0 cable per phase and shall be rated to operate in a 40º C ambient environment. The breaker shall be installed in the same location as the existing 150 Amp breaker having a compatible mounting style (plug-on or bolt-on). Remove the existing Kirk Key from the existing circuit breaker and plug the holes. During testing, the magnetic trip shall be set at the lowest possible level while still being able to start the Fire and Sprinkling Pumps. Once this setting has been achieved and observed by the WSF Representative, the adjustment screws shall be painted over to provide a tamper seal. Record the final settings and submit them to the WSF Representative.

D. Modify the alarm system as shown in **WSF DWG 8306-658-095-03**.

E. Install indicator lights as shown in **WSF DWG 8306-585-089-03**, **WSF DWG 8306-585-089-04**, and **WSF DWG 8302-585-089-02**.

F. Install three (3) corrected label plate, red phenolic with white core, containing instructions as to not to draw out breakers at each breaker as shown in **WSF DWG 8302-585-089-02**.

G. Install new label plates as shown in, **WSF DWG 8302-585-089-02.**

H. Prepare new and disturbed areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

43. PASSENGER DECK HANDRAIL REPLACEMENT
{MAINTENANCE}

A. Replace the existing handrails on the exterior of the port and starboard sides of the passenger deck and modify the weather deck drains as shown on **WSF DWG 8300W-611-005-01,** ISSAQUAH CLASS Passenger Cabin & Pilothouse Front Handrail & Safety Lines Modifications. It is **NOT** the intent of WSF to install the pilothouse front walkways or the fall restraint system.

B. Remove the existing handrails on the exterior of the passenger cabin on the port and starboard sides, grind area smooth.

C. Install new handrails, hand grabs and ladder rungs on the exterior of the passenger cabin on both the port and starboard sides as shown on **WSF DWG 8300W-611-005-01**.

D. The Contractor shall coordinate this item with the items involving the removal of the insulation in the passenger cabin and the top side painting; all work shall be completed prior to final coat of topside paint.

E. Apply one (1) coat of Far West Paint ~ Formula 117 (Tukwila, WA; similar. to Mare Island 117), GALVAPREP 5, or equal at 0.3 mils (DFT) to all galvanized surfaces on the new hand rails, railings, and all other galvanized surfaces.

1. Apply one (1) coat of INTERNATIONAL, Intertuf 262, Buff, to a minimum of 8.5-11 WET Film Thickness, 6-8 mils (DFT) to all areas prepared in this Item.

F. Prepare new and disturbed areas in way of this work on the exterior to an SSPC-SP 6, Commercial Blast Cleaning. Coat areas using the same method as specified in the Top side painting Zone 2.

G. Prepare new and disturbed areas in way of this work on the interior to SSPC-SP3, Power Tool Cleaning. Apply one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT). Hand stripe all edges. Apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

TOPSIDE PAINTING

Zone Descriptions for Topside Painting

M/V SEALTH is divided into nine (9) Zones for inspection, surface preparation, painting, and bidding purposes. Not all areas in each Zone may require Work by these Specifications. Each Specification Item stands alone.

NOTE:
Prior to commencing surface preparation the Contractor will present all areas for inspection of protective measures taken to prevent harm or damage to Vessel's equipment, other surfaces and systems.

Zone No. 1 Navigation Bridge Deck exterior surfaces, beginning at the top edge of the Curtain Plate above the Passenger Cabin windows and extending to the top of the Masts. All exterior surfaces of No. 1 and No. 2 End pilothouses, Crew's Quarters, midship house exhaust stacks, doors, vent louvers, vent trunks, ladders (and pans where present), equipment foundations, battery boxes, deck edge coaming, navigational light screens and brackets, Pilothouse dodgers, safety equipment brackets, vestibules, Masts and all other appurtenances.

Zone No. 2 Passenger Deck exterior surfaces (outside of the Passenger Cabin) from the Passenger Deck level to the top edge of the Curtain Plate above the Passenger Cabin windows and below the Navigation Bridge Deck handrail screens. Includes all weather surfaces of both the Port and Starboard Passenger Cabin exteriors, troughs and safety handrails below the windows, overhang above the windows, drain pipes and hangers, No. 1 and No. 2 End, Promenade exteriors, No. 1 and No. 2 End Promenade interiors including all boat stations, passenger benches, No. 1 and No. 2 End Picklefork areas, all attachments and appurtenances, ladders (and pans where present), overheads, bulkheads, fire stations, doors and passenger seating.

Zone No. 3 Port and Starboard Curtain Plating from the outboard top horizontal surface of the rubrail to the Passenger Deck level and from the Curtain Plate extremes at No. 1 and No. 2 End, including the anchor stowage area and anchor, hawser pipe, fixtures, vents and louvers.

Zone No. 4 Auto (Main) Deck outboard auto lanes, Port and Starboard Curtain Plate inboard surface areas, overhead areas, inboard and thwartship bulkheads, forward Picklefork coamings, haunch girders, life jacket (PFD) lockers (interior and exterior surfaces) and the outboard Machinery Casing and overhead extending from No. 1 to No. 2 End extremes, curbing, cleats, bollards, chocks, and tie downs, light fixtures, bells, speakers, fire hose stations, fire extinguisher boxes and stations, ventilation ducting, vent louvers, piping, fueling stations, MES launching stations, vent piping, and all appurtenances.

Zone No. 5 Auto (Main) Deck Center auto lanes area extending from No. 1 to No. 2 End. This area includes the forward face of the thwartship coaming between the Pickleforks, inboard Machinery Casings surfaces, overhead, ventilation louvers, ventilation ducting, piping, curbing, light fixtures, bells, speakers, and all appendages, including all Machinery Casing vestibules.

Zone No. 6 Deck surface areas. Includes Navigation Bridge Deck, Pilothouse side and front walkways, and all housetops, Passenger Deck Promenades and Pickleforks, Auto (Main) Deck walkways and all ladders, stairways, landings, safety areas and non - skid.

Zone No. 7 Stairway vertical and overhead surfaces from Auto (Main) Deck to Passenger Deck.

Zone No. 8 Signs, stencils, markings, label plates, safety striping, and dadoes, on all interior and exterior surfaces of Zone Nos. 1 through 7.

Zone No. 9 Handrails, railings, screens, and gates on all decks, ladders, stairwells, companionways, walkways Auto (Main) Deck to the top of the Masts.

44. DECK DRAINS
{STRUCTURAL PRESERVATION TOPSIDE}

A. Clean and test all weather deck drains for flow in the presence of the Vessel Staff Chief Engineer and the WSF Inspector prior to commencing with the fresh water wash.

B. Ensure that weather deck drains are securely covered during grit blasting operations.

C. Provide labor material and equipment to retest the weather deck drains for flow in the presence of the Vessel Staff Chief Engineer and the WSF Inspector upon completion of painting and clean up work. Plugged drains found shall be cleaned and reopened at the Contractor's expense.

45. FRESH WATER WASH
{STRUCTURAL PRESERVATION TOPSIDE}

A. Low Pressure Water Detergent Cleaning (LP WC) at 3,000 - 5,000 PSI to achieve a condition of SC-1 in accordance with Table 2 (Non-visual Surface Preparation Definitions) in SSPC-SP 12/NACE 5 Publication, in all Zones using Sherwin-Williams 747. The wand shall be held no more than twelve inches (12) from the surface being washed. The intent of this Work Item is to wash all surfaces in all Zones as described in the ZONE DESCRIPTION for Topside Painting.

B. Inspect the entire fresh water wash to the satisfaction of the WSF Inspector prior to proceeding with any grit blasting or painting.

46. PREPARATION AND PAINTING OF ZONE NO. 1 (NAV BRIDGE DECK AND ABOVE EXTERIOR SURFACES)
{STRUCTURAL PRESERVATION TOPSIDE}

A. Remove the four (4) bolted in vent louvers under the Pilothouse side walkways (two (2) each end) and grit blast as part of Item B below. After full coating system application under Items C and E below, reinstall using new, Contractor furnished, gaskets and Type 316L stainless steel fasteners.

B. Grit blast all areas of abrasion and corrosion to SSPC-SP 6, Commercial Blast Cleaning as authorized by the WSF Inspector. Work includes removal of all bolt-on plumb vent covers, door stops, hold backs, and plug-in boxes. Reinstall all removed Items after final coat using new, Contractor furnished, Type 316L stainless steel fasteners.

NOTE:
For bidding purposes, assume that 1,000 Square Feet (SF) shall require grit blasting. Upon completion of the preparation and painting, the Contract will be adjusted upward or downward to account for the actual area authorized by the WSF Inspector.

C. Apply one (1) coat of Sherwin-Williams, Seaguard 5000HS or 6000LT, Gray, to obtain a minimum of 4.0-8.0 Dry Film Thickness, to grit blasted areas.

D. The back sides, corners and sharp edges of all angles, rat holes, scallops and beams shall be hand-striped, using the brush method, with an additional 4-8 mils (DFT) of Sherwin-Williams, Seaguard 5000HS or 6000LT, of a contrasting color.

E. Wash down all grit blast residues using Low Pressure Water Clean (LP WC) at 3,000 – 5,000 PSI. The intent of this Item is to wash surfaces after spot blasting and prime coating prior to top coating.

F. Apply one (1) tie coat of Sherwin-Williams Seaguard 5000HS or 6000LT 2-3 mils DFT color off white. Apply one (1) coat Sherwin-Williams Sherthane 2K, WSF Blue White, minimum 2 mils to 4 mils DFT , to cover, on all surfaces of Zone No. 1. Colors shall be as detailed in **Attachment No. 1**.

47. PREPARATION AND PAINTING OF ZONE NO. 2 (PASSENGER DECK EXTERIOR)

{STRUCTURAL PRESERVATION TOPSIDE}

A. Prepare areas of abrasion and corrosion to SSPC-SP 6, Commercial Blast Cleaning in Zone No. 2 as authorized by WSF Inspector.

NOTE:
For bidding purposes, assume that 1,500 Square Feet (SF) shall require grit blasting to SSPC-SP 6, Commercial Blast Cleaning. Upon completion of the preparation and painting, the Contract will be adjusted upward or downward to account for the actual area authorized by the WSF Inspector.

B. Apply one (1) coat of Sherwin-Williams, Seaguard 5000HS or 6000LT, Gray; to obtain a minimum of 4-8 mils (DFT) to grit blasted prepared surfaces.

C. The back sides, corners and sharp edges of all angles, rat holes, scallops and beams shall be hand-striped, using the brush method, with an additional 4-8 mils (DFT) of Sherwin-Williams, Seaguard 5000HS or 6000LT, of a contrasting color.

D. Wash down all grit blast residues using Low Pressure Water Clean (LP WC) at 3,000 – 5,000 PSI. The intent of this Item is to wash surfaces after spot blasting and prime coating prior to top coating.

E. Apply one (1) tie coat of Sherwin-Williams, Seaguard 5000HS or 6000LT Off White 2-3 mils DFT. Apply one (1) coat Sherwin-Williams, Sherthane 2 ,WSF Blue White to obtain a minimum 2 mils – 4 mils DFT), to cover, on all surfaces. Colors shall be as detailed in **Attachment No. 1.**

48. PREPARATION AND PRESERVATION OF ZONE 2 (TROUGHS) {STRUCTURAL PRESERVATION TOPSIDE}

A. Grit blast all surfaces of Port and Starboard troughs (below passenger windows) and six (6) inches up the bulkheads from the troughs to a SSPC-SP 6, Commercial Blast Cleaning.

B. Apply one (1) full coat of Sherwin-Williams, Seaguard 5000HS or 6000LT, Gray, to obtain, 4-8 mils (DFT) to grit blasted areas.

C. The back sides, corners and sharp edges of all angles, rat holes, scallops and beams shall be hand-striped, using the brush method, with an additional 4-8 mils (DFT) of Sherwin-Williams, Seaguard 5000HS or 6000LT, of a contrasting color.

D. Apply one (1) tie coat of Sherwin-Williams, Seaguard 5000HS or 6000LT, Off White, to obtain a minimum of 2 –3 mils (DFT). Apply one (1) full coat of Sherwin-Williams, Sherthane 2, minimum 2-4 mils DFT, to cover, on all surfaces. Colors shall be as detailed in **Attachment No. 1**.

49. PREPARATION AND PAINTING OF ZONE NO. 3 (PORT AND STBD CURTAIN PLATING) {STRUCTURAL PRESERVATION TOPSIDE}

A. Remove the four (4) large bolt-on vent intake louvers (two (2) each, Port and Starboard) and grit blast both the louver assemblies and inside plenum area, up to the first flange joint, to SSPC-SP 6, Commercial Blast Cleaning. After full coating system application under Items C, D and F below, reinstall louvers using new, Contractor furnished, gaskets and Type 316L stainless steel fasteners.

B. Prepare areas of abrasion and corrosion to SSPC-SP 6, Commercial Blast Cleaning in Zone No. 3 as authorized by WSF Inspector.

NOTE:
For bidding purposes, assume that 2,000 Square Feet (SF) shall require grit blasting to SSPC-SP 6, Commercial Blast Cleaning. Upon completion of the preparation and painting, the Contract will be adjusted upward or downward to account for the actual area authorized by the WSF Inspector.

C. Apply one (1) coat of Sherwin-Williams, Seaguard 5000HS or 6000LT, Gray, to obtain a minimum, 4-8 mils (DFT) to grit blasted prepared surfaces.

D. The back sides, corners and sharp edges of all angles, rat holes, scallops and beams shall be hand-striped, using the brush method, with an additional 4-8 mils (DFT) of Sherwin-Williams, Seaguard 5000HS or 6000LT, of a contrasting color.

E. Wash down all grit blast residues using Low Pressure Water Clean (LP WC) at 3,000 – 5,000 PSI. The intent of this Item is to wash surfaces after spot blasting and prime coating prior to top coating.

F. Apply one (1) tie coat of Sherwin-Williams, Seaguard 5000HS or 6000LT, Off White, to obtain a minimum of 2-3 mils (DFT),Apply one (1) full coat of Sherwin-Williams, Sherthane 2K minimum 2-4 mils DFT to cover, to <u>all surfaces</u> of Zone No. 3. Colors shall be as detailed in **Attachment No. 1.**

50. PREPARATION AND PAINTING OF ZONE NO. 4 (INTERIOR STRUCTURE)

{STRUCTURAL PRESERVATION TOPSIDE}

A. Grit blast the entire zone including inboard and outboard curbing and out approximately eighteen inches (18") of the deck area from No. 1 End to No. 2 End extremes, to SSPC-SP 6, Commercial Blast Cleaning. Work includes raising of cables in the strap type hangers and grit blasting of these wire ways.

B. Apply one (1) coat of Sherwin-Williams, Seaguard 5000HS or 6000LT, Gray, to obtain a minimum of, 4-8 mils (DFT) to grit blasted prepared surfaces.

C. The back sides, corners and sharp edges of all angles, rat holes, scallops and beams shall be hand-striped, using the brush method, with an additional 4-8 mils (DFT) of Sherwin-Williams, Seaguard 5000HS or 6000LT, of a contrasting color.

D. Wash down all grit blast residues using Low Pressure Water Clean (LP WC) at 3,000 – 5,000 PSI. The intent of this Item is to wash surfaces after spot blasting and prime coating prior to top coating.

E. Apply one (1) tie coat of Sherwin-Williams, Seaguard 5000HS or 6000LT, to obtain a minimum, 2 –3 mils (DFT), Apply one (1) full coat of Sherwin-Williams, Sherthane 2K, minimum 2-4 mils DFT, to cover, to <u>all surfaces</u> of Zone No. 4. Colors shall be as detailed in **Attachment No. 1**.

51. PREPARATION AND PAINTING OF ZONE NO. 5
{STRUCTURAL PRESERVATION TOPSIDE}

A. Grit blast all areas of corrosion and abrasion to SSPC-SP 6, Commercial Blast Cleaning, as authorized by the WSF Inspector.

NOTE:
For bidding purposes, assume that 2,000 Square Feet (SF) shall require grit blasting to SSPC-SP 6, Commercial Blast Cleaning. Upon completion of the preparation and painting, the Contract will be adjusted upward or downward to account for the actual area authorized by the WSF Inspector.

B. Apply one (1) coat of Sherwin-Williams, Seaguard 5000HS or 6000LT, Gray, to obtain a minimum of, 4-8 mils (DFT) to grit blasted prepared surfaces.

C. The back sides, corners and sharp edges of all angles, rat holes, scallops and beams shall be hand-striped, using the brush method, with an additional 4-8 mils (DFT) of Sherwin-Williams, Seaguard 5000HS or 6000LT, of a contrasting color.

D. Wash down all grit blast residues using Low Pressure Water Clean (LP WC) at 3,000 – 5,000 PSI. The intent of this Item is to wash surfaces after spot blasting and prime coating prior to top coating.

E. Apply one (1) tie coat of Sherwin-Williams, Seaguard 5000 or 6000LT, to obtain a minimum, 2-3 mils (DFT), apply one (1) coat of Sherwin-Williams, Sherthane 2 at 2-4 mils DFT to cover, on all surfaces of Zone No. 5. Colors shall be as detailed in **Attachment No. 1**.

52. PREPARATION AND PAINTING OF ZONE NO. 6 (DECKS)
{STRUCTURAL PRESERVATION TOPSIDE}

A. Grit blast the entire No. 1 and No. 2 End Passenger Deck Pickle forks and Promenade areas (to include the athwart ship walkway outside and below the Promenade windows) to SSPC-SP 6, Commercial Blast Cleaning.

B. Grit blast all deck areas of active corrosion on all, Auto (Main) Deck, House tops, Pilot House tops, Midship House tops. Walkways and all ladders, stairways, landings, and safety areas to an SSPC-SP 6, Commercial Blast Cleaning.

NOTE:
For bidding purposes for Item B work, assume that 2,000 Square Feet (SF) shall require blasting and painting. Upon completion of the preparation and painting, the Contract will be adjusted upward or downward to account for the actual area authorized by the WSF Inspector. This area does not include any deck surfaces preserved or coated under the provisions of Item 42 below.

C. Apply one (1) coat Sherwin-Williams, Macropoxy 646, 5-10 mils (DFT) Haze Gray, to the areas one (1) day prior to applying non-skid. Provide labor, material and equipment to apply one (1) coat of Non-Skid Sherwin-Williams / American Safety AS-250 Haze Gray. Apply at 40 sq. ft. per gallon.

D. Apply one (1) full coat Sherwin-Williams, Sherthane 2K, 2-3 mils (DFT) to all areas in the zone that are not non-skidded. Colors shall be as detailed in **Attachment No. 1**. The safety striping, MES access lane stripes and stencils and auto lane. Apply one (1) coat of Sherwin-Williams, Corothane I Galva-Pac Zinc, Gray, to obtain a minimum of 3-4 mils DFT, to all grit blasted surfaces. Must spray zinc to meet Specification for blasted steel.

E. Wash down all grit blast residues using Low Pressure Water Clean (LP WC) at 3,000 – 5,000 PSI. The intent of this Item is to wash surfaces after spot blasting and prime coating prior to top coating let air dry.

F. markings are to be coated with a minimum 2-3 mils (DFT), to cover with, Sherthane 2K, as detailed in **Attachment No. 1** upon completion of the non-skid application.

53. PREPARATION AND PAINTING OF ZONE NO. 7 (STAIRWAY SURFACES)

{STRUCTURAL PRESERVATION TOPSIDE}

A. Prepare areas of abrasion and corrosion to SSPC-SP 6, Commercial Blast Cleaning in Zone No. 7 as authorized by WSF Inspector.

NOTE:
For bidding purposes, assume that 1,000 Square Feet (SF) shall require grit blasting to SSPC-SP 6, Commercial Blast Cleaning. Upon completion of the preparation and painting, the Contract will be adjusted upward or downward to account for the actual area authorized by the WSF Inspector.

B. Apply one (1) coat of Sherwin-Williams, Seaguard 5000HS or 6000LT, Gray; 6-8 mils (DFT) to grit blasted prepared surfaces.

C. Apply one (1) coat of Sherwin-Williams, Seaguard 5000HS or 6000LT Off White, to minimum 6-8 mils (DFT) to grit blasted and SSPC-SP 3 prepared surfaces per Item 57.

D. The back sides, corners and sharp edges of all angles, rat holes, scallops and beams shall be hand-striped, using the brush method, with an additional 6-8 mils (DFT) of Sherwin-Williams, Seaguard 5000HS or 6000LT, of a contrasting color.

E. Wash down all grit blast residues using Low Pressure Water Clean (LP WC) at 3,000 – 5,000 PSI. The intent of this Item is to wash surfaces after spot blasting and prime coating prior to top coating.

F. Apply one (1) full coat of, Sherthane 2, to obtain a minimum 2-4 mils (DFT), to cover, on all surfaces of Zone No. 7. Colors shall be as detailed in **Attachment No. 1.**

54. PREPARATION AND PAINTING OF ZONE NO. 8 (SIGNS, LABELS AND MARKINGS)

{STRUCTURAL PRESERVATION TOPSIDE}

A. Video, map out and record all of the Vessel stencils, marks, labels, signs, placards, operating instructions, and safety striping in way of the Work in Zone No's 1 through 7, using color photos which clearly show locations and legible text. Provide one (1) complete copy of this record, in booklet form, to the WSF Inspector prior to any removals, blasting and painting. The Contractor is responsible for replacing, with new, all stencils, marks, labels, signs, placards, placard holders, sign frames, operating instructions, and safety striping, when the painting is completed. Such stencils, marks, labels, signs, placards, operating instructions, and safety striping are to be located, shaped, colored, and sized exactly as they were when the Vessel arrived at the Contractor's facility.

B. Remove all stencils, marks, labels, signs, placards and operating instructions that are fastened to the surfaces of Zone Nos. 1 through 8, after mapping is completed, and prior to commencing the fresh water wash. Ensure all glue, adhesive, and tape is removed from the surfaces during the fresh water wash.

NOTE:
Masking of stencils, marks, labels, signs, placards, operating instructions, and safety striping will not be allowed without prior written approval by the WSF Inspector.

C. Manufacture, procure, and/or paint all new stencils, marks, labels, signs, sign frames, placards, placard holders, operating instructions, safety striping and dadoes. Paint used for stencils, marks, labels, signs, placards, operating instructions, safety striping and dadoes must be compatible with the top coat on the surface where it is applied, without wrinkling, peeling, or lifting. All labeling attached with fasteners, shall have those fasteners replaced with new, Contractor furnished, Type 316L stainless steel fasteners.

55. PREPARATION AND PAINTING OF ZONE NO. 9 (HANDRAILS AND SCREENS)

{STRUCTURAL PRESERVATION TOPSIDE}

A. Grit blast all areas of abrasion and corrosion on all handrails, railings, screens, and gates to a SSPC-SP 6, Commercial Blast Cleaning as authorized by WSF Inspector.

NOTE:
For bidding purposes, assume that 500 Square Feet (SF) shall require grit blasting and painting. Upon completion of the preparation and painting, the Contract will be adjusted upward or downward to account for the actual area authorized by the WSF Inspector.

B. Remove all deck railing/enclosure screens and all stairwell opening screens, and replace all existing mounting fasteners on all screens with new, Contractor furnished, Type 316L stainless steel fasteners, consisting of hex-head bolts, two (2) flat washers each bolt, and nylok style nuts.

C. Repair all paint damaged by deck and other removals or installations in overhead of car lanes to SSPC-SP3, Power Tool Cleaning. Apply one (1) coat of Sherwin Seaguard 5000HS or 6000LT, 4-8 mils DFT. Hand stripe all edges. Apply a topcoat of Sherwin-Williams, Sherthane 2K to a minimum of 2-4 mils (DFT) to match existing color.

D. Furnish and apply one (1) coat of Sherwin-Williams, Corothane I Mio Aluminum Primer at 2-3 mils (DFT) to all galvanized and aluminum surfaces on hand rails, railings, gates, screens, and all other galvanized and aluminum surfaces prepared by blasting.

E. Apply one (1) coat of Sherwin-Williams, Seaguard 5000HS or 6000LT, Gray to a minimum of 8.5-11 WET Film Thickness, 6-8 mils (DFT) to all areas prepared in this Item.

F. Apply one (1) coat of Sherwin-Williams, Sherthane 2K, to obtain a minimum of, 2-4 mils (DFT), to cover, on all surfaces in Zone No. 9. Colors shall be as detailed in **Attachment No. 1**.

56. APPLICATION OF CAULKING COMPOUND {STRUCTURAL PRESERVATION TOPSIDE}

NOTE:
Caulking compound shall be Sherwin-Williams, Stampede 1, White. Caulking compound is to be applied in accordance with the Sherwin-Williams recommendations related to surface preparation, thickness, width, and proper cure time prior to top coating with paint.

A. Apply caulking compound to all non-welded areas between all skip welds where the existing caulking is removed by grit blasting or missing.

B. Caulking shall be applied after the application of the Sherwin-Williams, Seaguard 5000HS or 6000LT and prior to the application of the Sherwin-Williams, Sherthane 2K as the topcoat.

NOTE:
For bidding purposes, assume that 12,000 Lineal Feet (LF) of caulking shall be required for this Work Item. Upon completion of the preparation and painting, the Contract will be adjusted upward or downward to account for the actual area authorized by the WSF.

57. POWER TOOL CLEANING TO BARE METAL {STRUCTURAL PRESERVATION TOPSIDE}

A. Prepare various areas throughout Zone Nos. 1 through 9 to an SSPC-SP 3, Power Tool Cleaning as directed by the WSF Inspector.

NOTE:
For bidding purposes, assume that 2,000 Square Feet (SF) shall require SSPC-SP 3, Power Tool Cleaning and shall be coated with Sherwin-Williams, Sea guard 5000HS or 6000LT, Off White, to obtain a minimum of, 4-8 mils (DFT). Upon completion of the preparation and painting, the Contract will be adjusted upward or downward to account for the actual area authorized by the WSF Inspector.

58. PREPARATION AND PAINTING OF LANDING LIGHTS AND FIRE EQUIPMENT

{STRUCTURAL PRESERVATION TOPSIDE}

A. Remove the landing lights from the house fronts, and all fire equipment cabinets, boxes, and apparatus, on the Navigation Bridge Deck, Passenger Deck, and Auto Deck for preparation and painting of the mountings. Prepare all mounts to a SSPC-SP 6, Commercial Blast Cleaning. Reinstall all removed Items following preparation and painting, using new, Contractor furnished, Type 316L stainless steel fasteners and nylok style nuts.

B. Prepare all paint deteriorated surfaces of fire equipment cabinets, boxes, and apparatus, to SSPC-SP 3, Power Tool Cleaning.

C. Furnish and apply one (1) coat of Sherwin-Williams, Seaguard 5000HS or 6000LT, Off White, to obtain a minimum of, 4-8 mils (DFT) to all prepared surfaces. Apply one (1) coat Sherwin-Williams, Sherthane 2K, 2-4 mils DFT, to cover, on all surfaces. Color same as existing.

59. WEIGHT CONTROL

{INTERIOR PRESERVATION}

A. The Contractor shall document weight changes and centers of gravity throughout the execution of work.

B. At the pre-arrival conference the Contractor shall prepare and submit to WSF for approval, a plan for monitoring weight and center information for all weights added, removed and relocated during this Vessel availability. This plan will address individuals, equipment and techniques to be used in the weight control process including the following points:

1. Certification of weighing facilities.
2. Where (location) the weighing will be accomplished.
3. If software is to be used, identify the software.
4. A sample data sheet showing date and time of weighing, the individual responsible for the activity, material identification, unit weight, quantity, center of gravity, and final disposition of the material (i.e. added, removed or relocated).

C. Data sheets generated by the approved process shall be submitted to WSF with progress invoices. Progress payments WILL NOT be made until all of the required weight control records have been reviewed by the WSF Representative.

(END)